Environmental management in algerian economic enterprise

from staff point of view of cement corporation Ain el kbira, Setif

BOUAOUNE Mohammed
University of Algiers 03

Abstract :

This study aims to identify the extent of the application of environmental management in AIN el KBIRA corporation, which is located in the state of Setif, which belong to the industrial complex of the Cement Algeria.To achieve the objectives of the study, it was followed descriptive analytical method, A questionnaire distributed, it was composed of three main axes: pollution prevention, continuous environmental improvement, compliance with environmental legislation, branching out where these three axes to 17 paragraph. The study found attention and focus of corporation on the environmental management increased in all its requirements: prevention of pollution, continuous environmental improvement and compliance with environmental legislation, at different rates of interest; return to the environmental situation, and the environmental impact.

Keywords: environmental management, cement corporation, setif.

الملخص:

تهدف هذه الدراسة إلى التعرف على مدى تطبيق متطلبات الإدارة البيئية في مؤسسة الاسمنت عين الكبيرة التي تقع في ولاية سطيف، والتي تنتمي إلى المجمع الصناعي لإسمنت الجزائر، لتحقيق أهداف الدراسة تمّ إتباع المنهج الوصفي التحليلي. للحصول على البيانات تمّ تصميم استبيان مكون من ثلاثة محاور رئيسية هي: الوقاية التلوث، التحسين البيئي المستمر والامتثال للتشريعات البيئية، حيث تتفرّع هذه المحاور الثلاثة إلى 17 فقرة. توصلت الدراسة الى اهتمام وتركيز المؤسسة على الادارة البيئية بمختلف أبعادها والتي هي: الوقاية من التلوث، التحسين البيئي المستمر والامتثال للتشريعات البيئية بنسب متفاوتة وذلك يعود إلى الاثر البيئي للمؤسسة.

الكلمات المفتاحية: الإدارة البيئية، شركة الاسمنت، سطيف.

1) INTRODUCTION

Industry plays a major role in the development of nations and has had a profound effect on improving the quality of human life. Gutberlet (2000) argued that industry was co-responsible for the current global environmental crisis through industrial production and consumption. They concluded that to achieve sustainability, industry required a paradigm shift with industry adopting an internal sustainability concept focussed on eco-efficiency and minimal use of energy and material per output unit[1]. We can ask these questions: Why should institution care about the disposal of contaminated waste, where it can be disposed of for free?, And why institutions concerned with environmental pollution, it causes for external damage?[2]. Commitment to environmental management is not considered as an administrative welfare, but it has several motivations, including: obtaining a competitive advantage, access to new economic opportunities and respond to the pressures of stakeholders and Commits to legislation on the environment and ethical obligations of the institution[3].

In the context of achieving the objectives of this study, we were selected cement corporation; AIN elKBIRA which is located in the state of Setif, due to the sensitivity of the industry from the environmental perspective. The problem of the study summarized in: *(To what extent the application of environmental management requirements in cement corporation: Ain elKbira ?).*

The study questions:

And emerge from this problem the following questions:

1. To what extent cement corporation: Ain elKbira focus on the requirement of *prevention of pollution?*

2. To what extent cement corporation: Ain elKbira focus on the requirement of *continuous environmental improvement?*

3. To what extent cement corporation: Ain elKbira focus on the requirement of *compliance with environmental legislation?*

Hypotheses:

To answer these questions, we offer the following hypotheses:

1. Cement Corporation: Ain elKbira focuses on requirement of *prevention of pollution dimension* at the level $\alpha = 0.05$.

2. Cement Corporation: Ain elKbira focuses on requirement of *continuous environmental improvement* at the level $\alpha = 0.05$.

3. Cement Corporation focuses: Ain elKbira on requirement of *compliance with environmental legislation* at the level $\alpha = 0.05$.

2) LITERATURE REVIEW

1. Pollution and environmental management:

Pollution is contamination of earth's environment with materials that interfere with human health or the natural functioning of living organisms and their physical surroundings1 Though some environmental pollution is a result of natural causes, many others are caused by human activities[4]**.** Environmental pollution causes health problems by affecting human health and lives. Environmental deterioration by man is attributed to three major causative factors.1) overpopulation 2) Urbanization 3) Industrialization[5].

Pollution prevention calls for you to look at the entire process, determine the source of contamination and what can be done to prevent it[6]**.** Pollution prevention is the way to the environmental management, Understanding and use of the word "environmental" quite often tends to be associated with some kind of human impact on natural systems. This context distinguishes it from the word "ecological," which can be characterized as a concept of interdependence of elements within a system. As discussed above in the essay, "Ecological Sustainability as a Conservation Concept,"[7]

Environmental management at the enterprise level are interested mainly how to manage hazardous materials and waste, and reduce the use of materials and energy, and conducting recycling[8]**,** environmental management focus on pollution prevention, continuous improvement of environmental performance and compliance with environmental legislation[9]**.** It can be broadly defined the environmental management at as "the total of activities carried out by a particular society with the objective to protect the environment"[10]**.**

2. Stages in the Development of Environmental Management Concepts[11]:

Environmental Management Public Institutions:

• Environmental management responsibilities dispersed over sectoral agencies.

• Environmental institutions at different levels but without sufficient co-ordination.

• Central institution for integrated environmental planning with environmental units in sectoral agencies and decentralized institutions for implementation.

Environmental pollution control instruments:

• Focus on technology and banning certain products with only limited discharges.

• Move towards technology-based permits (best available technology) and technology-based discharge standards.

• Tradable discharge permits and strategic use of public information.

Environmental impact assessments (EIA):

• Environmental impact assessment for public projects limited to mitigation of impacts.
• For public and private projects in which alternatives are required and the objective is to raise quality.
• Strategic EIAs to integrate environmental issues into strategic planning and address cumulative effects.

Civil society:

• Weak or non-professional environmental NGOs
• Strong and competent NGOs playing a consultative role in political decisions
• NGOs playing a consultative role in industry; development of co-management initiatives

Private sector:

• Environmental interests are poorly articulated within the economic system.
• Environmental interests limited to particular interested groups.
• Environmental interests are articulated by a broader group of 'green' business organizations.

3. Complementary Systems and Tools environmental management :

Institutions in most industrialized countries have adopted environmental protection practices, in essence, to a large extent on the preservation of water and air, and emissions control and waste disposal[12]. Growing industrial and government interest in energy and environmental management has led to the development of a number of concepts and tools that enable organizations to understand, evaluate and manage the environmental implications of their operations, services and products. Some tools are[13]:

• Green procurement;
• Sustainable community planning;
• Life cycle management;
• Life cycle assessment; and
• Sustainable design.

4. Challenges of developing a new conceptual framework for environmental management (EM):

More and more, stakeholders and customers are expecting organisations to demonstrate their commitment to managing their impacts on the environment[14] . But there are some challenges[15]:

• Integrating EM within sectoral and cross-sectoral plans and government policies to overcome sectorialization and fragmentation (interpolicy and intrapolicy integration).

• Developing a more pro-active and strategic application of EM procedures, i.e. at earlier stages of decision making, thus addressing political and institutional issues at higher policy levels that are fundamental for reforms (i.e. root causes of environmental degradation).

• Shifting attention from EM measures and decisions to EM as a decision-making process aimed at raising awareness, reforming policy, and achieving broad commitment through participation, capacity building and institutional development.

• Developing solution strategies for problem areas for which market mechanisms are inadequate, and developing new organizational arrangements involving civil society and private sector agencies to mobilize financial resources and improve the enforcement of EM objectives.

• Striking a balance between raising competitiveness and trade (and making use of new opportunities that markets provide) while reducing the dependency on natural resources and enhancing environmental quality.

• Striking a balance between specific aspects of EM and generalities of governance and institutional development.

3) METHODOLOGY

1. Cement Corporation Ain elKbira:

spend a contract for the construction this Corporation in 1974, in november 1978 began the real production, which is specialized in the production and marketing of cement under the name of SCAEK.

This Corporation is located 350 kilometers east of Algiers, 20 km north of Setif city and 7 kilometers south of the Ain elKbira city, its high above the sea of: 1040 meters, it occupies an area of 204 hectares, the Corporation used the raw materials extracted in the production process of the two mines : mine material lime Calcaire from *Mount Mjohns* mine, and another for material clay Argile of *Theniet Mouloutou* mine,

The General Administration of Corporation is located in the wilaya of Setif. This Corporation is a shareholding company with a social capital of: 2.200.000.000 DA, with an output capacity: 1.000.000 tons of cement annually[16].

In 2008, Ain elKbira Corporation obtained the environmental management system: ISO 14001 certification. The same year that obtained the second place of the National Prize for the Environment.

2. The study population:

The study population devise to three main categories of workers, which are: cadres, and control agents and executive agents. The study population (original) consists of the following:

- The number of cadres: 112 workers.
- The number of agents of control: 199 workers.
- The number of executive agents: 71 factor.

3. The study sample:

We distributed: 35 questionnaire personally, and the distribution of questionnaires to each category (class) of the employees is about 8% of the number of employees in each category. we take into account that the distribution is random in each category. We was distributed: 32 questionnaire of total, two of them were canceled for lack of suitability to the research, total disposable for study were: 30 questionnaire.

4. Study tool:

The questionnaire consists of two parts:

•Part I: is for personal feature of the transponder, such as: sex, educational, qualification and years of experience.

•Part II: is for the environmental management requirements, it consists of (17) paragraphs and divided into three main dimensions:

- Prevention of pollution: It consists of 6 paragraphs.
- Continuous environmental improvement: It consists of 5 paragraphs.
- Compliance with environmental legislation: It consists of 6 paragraphs.

Was used quintet Likert scale to measure the responses of the study sample passages about the questionnaire.

4) RESULTS

1. Statistical description of the study sample according to personal factors:

Table (01): the sample description according to personal factors

personal feature		number	percentage
Gender	Male	38	%95
	female	02	%5
Age	Less than 30 years	10	%25
	From 30 to 40 years	18	%45
	Greater than 40 years	12	%30
Qualification	Technician or less	20	%50
	Bachelor or Engineer	16	%40
	M.A.	03	%7.5
	Doctorate	01	%2.5
Years of Experience	5 years or less	10	%25
	From 5 to 10 years	09	%22.5
	From 11 to 16 years old	10	%25
	16 years and over	11	%27

Source: (prepared by the researcher; depending on the output: V20 SPSS)

This table shows that the percentage of men in the sample selected at random are 95%, the ratio indicates male dominance in the field of work in the cement sector in the studied, was due primarily to sites that choose to install cement factories.

workers aged between 30 and 40 years, which constitutes 45% of the studied sample

As it is clear that most of the workers in the selected sample studied hold a technical certificate or less, 50% of the sample, and this is due to the cement industry requires primarily employ technical qualifications,

The table shows also that the studied sample consists of individuals converge their experience levels, and that most of the workers in the studied sample outweigh the experience of 11 years, and the proportion of workers who exceed the number of years of experience of 16 years is 27%, this indicates that cement Corporation requires practical experience of the staff.

2. Analysis requirements of the Environmental Management:

2.1 prevention pollution requirement analysis:

Table (02): the arithmetic mean, standard deviation and relative importance of each paragraph of pollution prevention requirement

	Paragraphs	Arithmetic mean	standard deviation	Relative importance	Ranking	level
1	Enterprise is committed to implementing reasonable measures to prevent the pollution of air, water and soil.	4,52	0.554	90.4%		ery high
2	The use of natural resources in the region prudent and effective manner.	4,38	0.586	%87.6	2	Very high
3	The Foundation limiting the impact of any accidental	4,20	0.648	%84	3	Very

	contamination inevitable.					high
4	Enterprise Manager maintain an adequate level of preparedness to respond quickly and effectively to environmental emergencies.	4,05	0.714	%81	4	Very high
5	The use of electrical energy and water as efficiently as possible.	3,90	0.672	%78	6	Very high
6	Foundation seeks to recover, and reuse and recycling of waste whenever possible.	4,00	0.961	%80	5	Very high
pollution prevention		4,175	0.489	%83.5		Very high

Source: (prepared by the researcher; depending on the output: V20 SPSS).

Cement Corporation Ain elKbira focuses on all elements of the prevention of pollution requirement with different degree. But the percentages are close. Without neglecting any element.

The degree of focus on prevention of pollution requirement is very high, Arithmetic mean is **4,175** the rate of interest is 83%, which indicates that the cement Corporation Ain elKbira attaches great importance to the prevention of pollution and reliance on proactive measures to reduce it.

2.2 continuous environmental improvement requirement analysis:

Table (03): the arithmetic mean, standard deviation and relative importance of each paragraph of continuous environmental improvement requirement

Paragraphs		Arithmetic mean	standard deviation	Relative importance	Ranking	level
1	The management of environmental audit to assess the potential environmental risks and identify opportunities for continuous improvement of environmental performance.	4,30	**0.791**	%**86**	1	Very high
2	The organization's management determines the environmental goals and objectives, and evaluate environmental performance.	4,13	**0.607**	%**82.6**	2	Very high
3	Enterprise Manager seeks to integrate environmental considerations into their decision-making processes at all levels.	3,98	**0.686**	%**79.6**	3	High
4	Enable employees to be responsible for the environment.	3,92	**0.664**	%**78.4**	4	High
5	Employ staff who can offer environmentally added value.	3,90	**0.955**	%**78**	5	High
Continuous environmental improvement		3,995	**0.507**	%**79.9**	**6**	High

Source: (prepared by the researcher; depending on the output: V20 SPSS)

As the first requirement, cement corporation Ain elKbira focuses on all elements of the Continuous environmental improvement requirement with different degree. But the percentages are close. Without neglecting any element.

The degree of focus on prevention of pollution requirement is very high, Arithmetic mean is 3,995 the rate of interest is **79.9**%, which indicates that the cement Corporation Ain elKbira attaches

great importance to the Continuous environmental improvement and reliance on proactive measures to reduce it.

2.3 compliance with environmental legislation requirement analysis:

Table (04): the arithmetic mean, standard deviation and relative importance of each paragraph of requirement compliance with environmental legislation requirement

	Paragraphs	Arithmetic mean	standard deviation	Relative importance	Ranking	level
1	Compliance with applicable in the sector of environmental laws.	4,43	**0.675**	%**88.6**	1	Very high
2	Prepare periodic reports on environmental commitments.	4,08	**0.656**	**81.6**%	3	Very high
3	Assess compliance with environmental laws and regulations.	4,15	**0.802**	%**83**	2	Very high
4	Determine the expected environmental effects of activities related to the environment.	3,92	**0.616**	%**78.4**	4	High
5	Respect for the cultural heritage of the area.	3,45	**0.677**	%**69**	5	High
6	Minimizing the potential impact of the activities of the Foundation on heritage.	3,30	**0.966**	%**66**	6	High
	Compliance with environmental legislation	3,887	**0.455**	%**77.74**		High

Source: (prepared by the researcher; depending on the output: V20 SPSS).

Also the third requirement, cement corporation Ain elKbira focuses on all elements of the Compliance with environmental legislation requirement with different degree. But the percentages are close. Without neglecting any element.

The degree of focus on prevention of pollution requirement is very high, Arithmetic mean is **3,887** the rate of interest is **%77.74**which indicates that the cement Corporation Ain elKbira attaches great importance to the Compliance with environmental legislation and reliance on proactive measures to reduce it.

2.4 hypothesis testing:

Table (05): hypothesis testing

Requirement	Arithmetic mean	standard deviation	T value	significance level
pollution prevention	4.175	0.489	15.19	0.000
Continuous environmental improvement	3.887	0.455	12.33	0.000
Compliance with environmental legislation	3.995	0.507	12.40	0.000

Source: (prepared by the researcher; depending on the output: V20 SPSS).

After using the (t) test for one sample, results are shown in the previous table, the significance level of prevent pollution requirement is 0.000 which is less than 0.05, meaning that there are significant differences between the mean of prevention of pollution and the the proposed mean, the mean of prevention of pollution is 4.175, which is greater than 3; conclude that the cement Corporation Ain elKbira focuses the prevention pollution requirement.

Also with the second requirement, by using the (t) test for one sample, the significance level of Continuous environmental improvement requirement is 0.000 which is less than 0.05, meaning that there are significant differences between the mean of Continuous environmental improvement and the the proposed mean, the mean of Continuous environmental improvement is 3.887, which is greater than 3; conclude that the cement Corporation Ain elKbira focuses the Continuous environmental improvement requirement.

After using the (t) test for one sample, the significance level of Compliance with environmental legislation requirement is 0.000 which is less than 0.05, meaning that there are significant differences between the mean of Compliance with environmental legislation and the the proposed mean, the mean of Compliance with environmental legislation is 4.175, which is greater than 3; conclude that the cement Corporation Ain elKbira focuses the Compliance with environmental legislation requirement.

5 CONCLUSIONS

1. Cement corporation: Ain elKbira focuses on requirement of prevention of pollution dimension at the level $\alpha = 0.05$.

2. Cement corporation: Ain elKbira focuses on requirement of continuous environmental improvement at the level $\alpha = 0.05$.

3. Cement corporation focuses: Ain elKbira on requirement of compliance with environmental legislation at the level $\alpha = 0.05$.

4. the rate of interest on prevention of pollution requirement is **83%,**

5. the rate of interest on continuous environmental improvement requirement is **79.9**%.

6. the rate of interest on compliance with environmental legislation requirement is **%77.74**.

REFERENCES :

[1] Nyirenda, Gibson. & Ngwakwe, Collins, C. (2014). Environmental Economics. *Environmental management practices for sustainable development: agenda for harmonization*. Volume 5, Issue 1. p:79.

[2] Bréchet, Thierry. & Jouve, Pierre-André. (2 0 0 9) .Why environmental management may yield no-regret pollution abatement options. *ECOLOGICAL ECONOMICS. 68*. p :1772.

[3] Bansal, Pratima. & Roth, Kendall. (2000). Why Companies go Green: a Model of Ecological Responsiveness. *Academy of Management Journal 43(4)*..p :717.

[4] Kanchev, G. et al. (2005). ENVIRONMENTAL POLLUTION, SOME REALIZED PROJECTS AND SUGGESTIONS. *Trakia Journal of Sciences*. pp 14-16, Vol. 3, No. 8. p: 15.

[5] Ashoka, Q. Chakkaravarthy. (2003) HUMAN SURVIVAL AND ENVIRONMENTAL POLLUTION. *Third International Conference on Environment and Health, Chennai, India, 15-17 December,. Che nnai*: University. p:70.

[6] Waters, Jean S. (1998). Environmental Management Systems. *Training Program*. Pollution Prevention Institute. Kansas Department of Health and Environment. p:04.

[7] Morelli, John. (2011). Environmental Sustainability: A Definition for Environmental Professionals. *Journal of Environmental Sustainability*. Volume 1 , Issue 1. p:04.

[8] Lin, Ru-Jen. (2011). Moderating effects of total quality environmental management on environmental performance, *African Journal of Business Management. 5(20)*. p: 8090.

[9] Naclor energy. (2010). Environmental Policy and Guiding Principles. Version. .p:01.

[10] Kessler, Jan, Joost. et al. (June 2001). ENVIRONMENTAL MANAGEMENT Towards a Conceptual Framework for Environmental Governance. *Sustainable Development Department Inter-American Development Bank*. Washington, D.C. p:05.

[11] Kessler, Jan, Joost. et al. (June 2001). Op. Cit. p:03.

[12] Morrow, David. & Rondinelli, Dennis. (2002). Adopting Corporate Environmental Management Systems: Motivations and Results of ISO 14001 and EMAS Certification. *European Management Journal. 20(2).* p :161.

[13] Rendell, Edward, G. & McGinty, Kathleen A. (2004). Management Systems. *A Guidebook for Improving Energy and Environmental Performance in Local Government*. p:06.

[14] Business Resource Efficiency Guide. (2015). Your Guide to Environmental Management Systems. *WRAP*. p:04.

[15] Kessler, Jan, Joost. et al. (June 2001). Op. Cit. p:04.

[16] (www.scaek.dz/presentation.asp) 02/05/2013.