

# The Environmental Impact and the Management System of Companies

*Jose Daniel Barquero Cabrero Eserp*<sup>1</sup>

*Manuel Medina Elizondo*<sup>2</sup>

<sup>1</sup>*Escuela Superior, Barcelona, España.*

*jd.barquero@esep.com*

<sup>2</sup>*Universidad Autónoma de Coahuila, México.*

*drmanuelmedina@yahoo.com.mx*

## Abstract

The central idea of this article is to show some aspects related to issues of environment and sustainability. Also its purpose is to encourage the awareness that environmental protection is not a waste of money, but it is, in fact, a perspective of business that contributes to achieve the profitability of organizations. This article shows some stages of the GRECO initiative applied in the Mediterranean area, which facilitates the incorporation of SMEs to a better environmental management which would translate into an increase of profitability.

**Key words:** Environment, sustainability, society, responsibility, benefits, economy.

## El impacto medio ambiental y el sistema de gestión de las compañías

### Resumen

La idea central de este artículo es mostrar algunos aspectos relacionados con el problema del medio ambiente y la sostenibilidad, también quiere incentivar la conciencia de que proteger el medio ambiente no es una pérdida de dinero, sino que de hecho es una perspectiva de negocio que contribuye a al-

canzar beneficios a las compañías. Este artículo muestra algunas etapas de la iniciativa GRECO aplicadas en el área del Mediterráneo, las cuales facilitan la incorporación del SMEs hacia una mejor gestión medioambiental, el cual también se traduciría en un incremento del beneficio.

**Palabras clave:** Medio ambiente, sostenibilidad, sociedad, responsabilidad, beneficio, economía.

## 1. INTRODUCTION

Various sources from the above-mentioned institutes and the ISO 14000 standard, [1] a part from the other United Nations program for the environment (UNEP) [2] have been consulted in this article. In the first part we commented how this general information is handled by the IMCO here, [3] as you probably know, deals with the competitiveness at the level of country and region. Then, we analyze the participation of enterprises in this own theme but from a purely business environment, how this issues are handled by the national model for competitiveness in its 2009 version, the final part is related to the ISO 14000 standard that was designed to deal with environmental issues. It is completed with the results of a survey to a group of thirty businessmen of the Comarca of La Laguna where they commented their perception about a group of questions made in models of competitiveness in Mexico.

From their answers it is possible to form a panorama on the aspects on which it is necessary to have greater impact to improve the effectiveness and efficiency and to reduce the environmental impact.

## 2. DEVELOPMENT

The IMCO report of Urban Competitiveness 2010 [3] studied 86 cities through the analysis of 10 factors of competitiveness based on 111 variables. This allows them to establish a rate that becomes a useful tool for the recommendation, implementation and improvement of public policies relating to the cities of the country, that these should steadily increase their welfare level, beyond the inherent possibilities that offer their own resources, technological and innovation capacity; All the above mentioned, is irrespective of the normal economic fluctuations that the country may suffer. The ten indicators underlying this report to measure the competitiveness of the nation and of the regions is shown in Table 1.

**Table 1. Indicators to measure the competitiveness of the Nation and Regions.**

1.	Reliable and objective law system
2.	Sustainable management of the environment
3.	Inclusive, prepared and healthy society
4.	Stable Macro Economy
5.	Stable and functional political system
6.	Efficient factors market
7.	Precursor sectors of world class
8.	Efficient and effective Government
9.	Benign International Relations
10.	Economic sectors in vigorous competitions

The second of these indicators relates with the sustainable environment management (SME). This subscript describes both the state of environmental conservation and the rate of degradation of the main environmental assets and its interaction with the productive activities and consumption. This factor considers the environment as an essential condition to generate sustainable long-term growth and development.

When in 2008 the IMCO processes the results of this variables in homogeneous groups of competitiveness, the La Laguna territory -our influence area- is situated in a middle-low group, position which shares with other 28 cities of metropolitan zones that together accounts the 19,4% of the country population and at the same time they generate the 17,51% of the Mexican GDP. This is not a good position because before this middle-low group, there are others qualified as High, Adequate, and Middle High.

Table 2 shows the ten indicators which measured this index, referred only to the variable environmental management; the second column includes the results of our territory and the third a similar value but at Mexico. The call to attention is referred to aspects such as protected natural areas or treated sewage volume or the aspect of green areas in which we have values well below those of the country.

**Table 2. Environmental management indicators for the year 2009 at the level of La Laguna, Mexico.**

INDICATOR	Value of La Laguna Indicator 2008	Value of Country Indicator 2008
Protected natural areas	1,83	6,2
Indicator: % protected surface / total area		
Indicator annual reforestation rate: % reforested surface / total area	0,22	0,22
Companies certified as "Clean"		
Indicator: # companies with PROFEPA certify by millions of PEA	53,21	33,8
Environmental emergencies		
Indicator: # of average emergency	3,29	2,4
Extreme climatic conditions		
Indicator: standard deviation of daily temperature	3,10	3,7
Green areas		
Indicator: % of the territory with forests, jungles and vegetation	6,0	11,3
Controlled disposal of solid waste		
Indicator: % of waste that are deposited in controlled sites	46,05	57,3
Water stress		
Indicator: average annual precipitation	75,93	53,1
Overexploitation of aquifers		
Indicator: % surface over-farmed / total area	20,32	25,3
Volume treated sewage		
Indicator: liters per second for every million inhabitants	619,43	1108,2
Soils with chemical degradation		
Indicator: % degradation surface chemistry/sup. total	66,17	57,6

The IMCO/2008 [3] report raises that at country level -comparing 2006-2008- the variable which improved further in this subscript was the rate of urban reforestation, which rose from 0.15% of the territory of the cities to the 0.22%, on average. In the same way, it achieved a positive change in the territory corresponding to natural protected areas. The worst was the water stress which fell by 42%.

The table also set out the positive situation on this moment of the cities of Aguascalientes and Monterrey which are at the forefront, not only of the final disposal of solid waste in controlled sites (100% and 97%, respectively), but also of its final use. Since 2007 in Aguascalientes operate two captivating of biogas factories, in the landfills of San Nicolás and Las Cumbres. Since this year there has been an annual burning of biogas from 16.2 million m<sup>3</sup>, receiving in 2008 more than 600,000 dollars for royalties from the sale of carbon credits. In addition, in April 2009 he began the construction of a factory generating electricity from biogas.

In the same way, the first plant of electrical generation from biogas in the metropolitan area of Monterrey operates since 2003. The functioning of this plant, has avoided the emission of more than 46 thousand tons

of gas methane, which leads almost 836 thousand tons of carbon dioxide. With biogas they produce the electrical energy equivalent to consumption per hour of seven thousand houses with ten spotlights of 100 watts each. This energy supplies the 80% of the energy used in lighting, the operation of the subway and pumping of potable water in the metropolitan area of Monterrey. In 2009 they began the third phase of expansion of the plant that seeks to increase energy production equivalent to the consumption of twenty-five thousand houses and a biogas destruction equivalent to three million tons of CO<sup>2</sup>.

The Mexican Institute for Total quality promotes the national competitiveness 2009 model, [4] characterized by its emphasis on cause the strategic thinking for a better understanding of the environment in which the Organization operates and the basis of resources that are available to respond to this; It promotes also the development of an external vision to provide a flexible an agile adaptation, to an environment which in a continual evolution, and in which industries, markets, technological changes and the stakeholders of the organizations, are continually posing new challenges.

The model comprises seven drivers of value that contribute to raise the competitiveness of the Organization: leadership, customers, planning, processes, personnel, information and knowledge and Corporate Social Responsibility, in which the environment is included. These drivers allow evaluating the competitiveness and sustainability of the Organization through a group of questions.

Seven are the questions which are subject enterprises to evaluate them in order to assure the lowest environmental impacts:

- i. What indicators are used to measure: emissions into the atmosphere, water consumption, consumption of energy and waste generation?
- ii. What actions have been generated to reduce the impact on climate change?
- iii. How is decreased energy intensity in the processes of operation?
- iv. What actions are undertaken to reduce the environmental footprint of products?
- v. How are integrated the indicators which apply the concept of eco-efficiency to assess the environmental performance of the organization?
- vi. What commitments exist with the community to promote education and environmental awareness?

vii. With what initiatives it responds to the requirements of recovery of ecosystems?

Two concepts we want to point out, the first referred to the environmental footprints as cargo measures imposed on the natural environment by a population given, expressed in the surface area required to sustain their levels of consumption and waste production; they consider the effects of the technological and commercial development in the carrying capacity of the planet. Its objective is to assess needs in natural capital, derived from consumption. And within the environmental footprint MNC 2009 promotes the study of the environmental footprint of the product when it comes to assess how green is a green product?, i.e., what amount of greenhouse gases were generated during the manufacture of this product?, for what would have to take into consideration a number of factors, such as of what is done the product and where are the elements that make up it -in many occasions, even the manufacturers - and much less consumers- have this information. The other concept is eco-efficiency, understood as the possibility of creating more goods and services using fewer resources and creating less waste and pollution.

In short: any company that is aspiring to the national quality award will be evaluated on the theme of environment through these questions, same that in a brief synthesis manages to grab the most important aspects that must be satisfied.

The ISO 14000 standard is a set of documents of environmental management which, once implemented, will affect all aspects of the management of an organization in their environmental responsibilities and help organizations to systematically address environmental issues, in order to improve the environmental performance and profit opportunities. The standards are voluntary, have no legal obligation and do not establish a set of quantitative goals regarding levels of emissions or specific methods of measuring these emissions. On the other hand, ISO 14000 focuses on the organization by providing a set of standards based on procedure and guidelines from which a company can build and maintain an environmental management system. The system of environmental management according to ISO 14001: 2004 and ISO 14004: 2004 is the tool that allows organizations to formulate policies and objectives, taking into account the legal requirements and information relating to its aspects and environmental impacts. It is defined as that part of the system of overall management of the organization that includes organizational structure, planning activities, procedures,

processes and resources to develop, establish, achieve, reviewing and maintaining the environmental policy.

ISO 14001 is an internationally accepted standard that expresses how to establish a system of management of the environment (EMS) effective. The standard is designed to strike a balance between maintaining profitability and reducing impacts on the environment and, with the support of the organizations, it is possible to achieve both goals.

ISO 14001 is focused to any organization of any size or sector, which are looking for an improvement of the environmental impacts and complying with legislation in the field of environment.

An EMS is a mechanism for regulation of business management in the following aspects:

- Identify and control the environmental impact of its activities, products or services.
- Continuously improve their environmental performance.
- To apply a systematic approach to establish environmental objectives and goals to achieving these and to demonstrate that they have achieved.

What is sought is to minimize the generation of waste in the various productive activities and services, through the adequacy of facilities and processes.

CAR-PL cleaner production Regional Activity Centre strengthened during the 2008 and 2009 their actions aimed at the promotion of the consumption and production patterns, [5] creating alliances with the Marrakech process, the global initiative on consumption and sustainable production driven by UNEP and the Department of economic and Social Affairs of the United Nations. The CP/RAC, in the implementation of its mission to promote the production and sustainable consumption, and the sound management of chemicals, puts a special emphasis on three specific areas, in which the Centre has a remarkable experience and a great potential: the diffusion of cleaner production and green competitiveness, through the GRECO initiative, [6] sustainable consumption and finally, the rational management of chemicals substances. The Greco initiative, which has tried for a decade in different companies in the Mediterranean region, seeks to involve and engage small and medium-sized enterprises in the integration of the environment as a strategic element of profitabil-

ity. The project aims to “educate the companies that protecting the environment is not a waste of money, but it is actually a business perspective”. The initiative aims to provide SMEs with assistance and financial resources to discover what the best pollution prevention techniques appropriate for each case, calculating the profitability of projects implementation and evaluating the environmental benefit obtained. It is, ultimately, the bet value creation based on the improvement of the environmental performance of organizations, understood as a whole.

The GRECO [6] initiative is based on:

- Disclosure of information related to available PL techniques in enterprises of the Mediterranean (it will be important to the exchange of experiences including MedClean files). Through the publication of the GRECO report (based on one hundred cases MedCleans analysis) and wide dissemination, conferences, activities in network, website and annual report.
- Provide technical assistance to SMEs, through training on ways and means to introduce solutions PL more adapted to these companies, and to evaluate the growth of profitability and the environmental benefits of the adaptation of these solutions. This activity will take place primarily through technical workshops.
- Provide financial aid to SMEs which wish to adopt techniques, through international relevant financial institutions (IFC).
- Involve all public institutions and relevant agencies in all actions relating to el GRECO.
- Promote public-private partnership for green competitiveness.
- Promote the role of the social responsibility of enterprises (CSR) on green competitiveness and sustainable consumption.

The strategy is based on the disclosure of the implementation of environmental techniques (PN) in the Mediterranean region, which have been implemented successfully in more than one hundred SMEs (MedCleans chips) and that it has become a genuine strategy of green competitiveness with which everybody gains, for the Mediterranean partners.

To demonstrate that the Greco initiative is not a utopia, the CAR-PL has one hundred examples of companies that have successfully implemented the use of alternative raw materials, the energy savings and



the recovery and recycling of gas, heat and organic matter derived from the production process, among other measures.

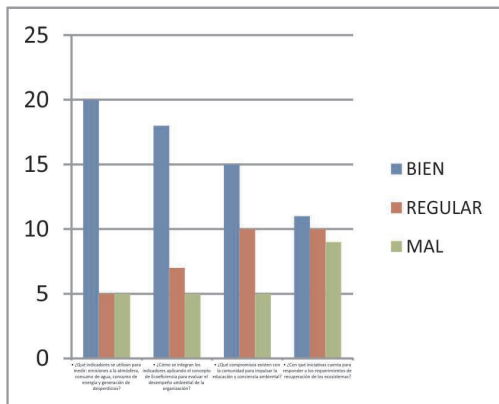
### 3. RESULTS

Topic: Perception held by entrepreneurs of the Comarca of La Laguna on the status of the environmental management following a guide contained in the national model for competitiveness.

3.1. The questions are based on a set of selected issues and responses are encoded in either; Regular or bad according to the perception of respondents that are themselves leaders in their companies.

To ensure the lowest environmental impacts:

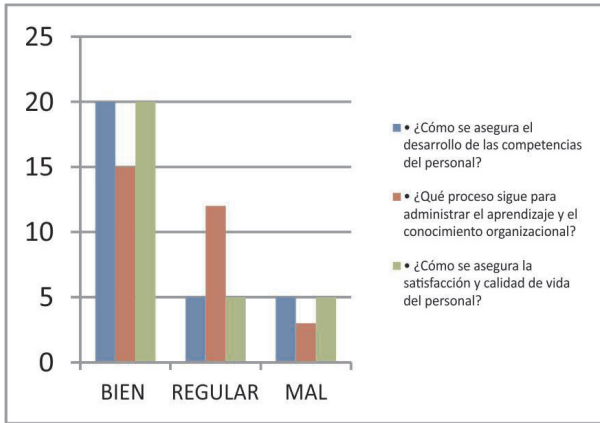
- Which indicators are used to measure: emissions into the atmosphere, water consumption, consumption of energy and waste generation?
- How are the indicators to assess the environmental performance of the organization integrated to implement the concept of eco-efficiency?
- What commitments exist with the community to promote education and environmental awareness?
- What initiatives have to respond to the requirements of recovery of ecosystems?



3.2. To respond to the requirements of the sustainable development strategy as regards personnel:

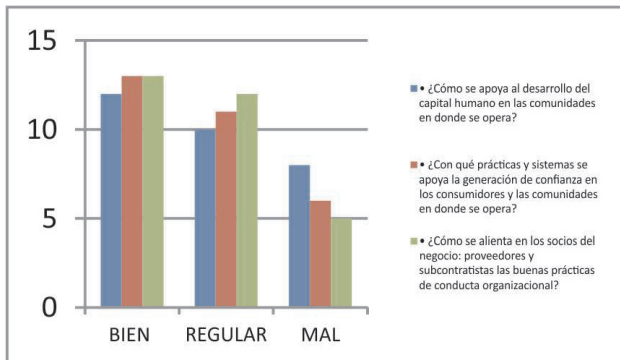
- How does make sure of the development of competencies of the staff?

- Which is the process followed to manage learning and organizational knowledge?
- How does make sure about the satisfaction and quality of life of the staff?



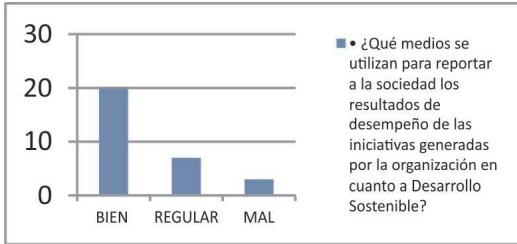
3.3.To respond to the requirements of the strategy of sustainable development in the community and consumers:

- How is supported the capital resource in the communities where it operates?
- Which are the practices and systems that supports the generation of confidence in consumers and communities where it operates?
- How are encouraged in the business partners: suppliers and subcontractors to have good practices of organizational behavior?



3.4. For accountability to society:

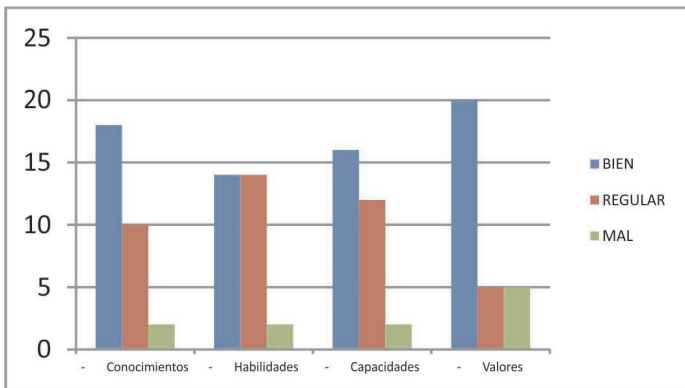
- What means are used to report the results of performance of the initiatives generated by the organization with regard to a sustainable development to society?



3.5. To respond to the needs of the sustainable development. Strategy for staff

How to make sure that the development of competencies of the staff to respond to the requirements of the sustainable development strategy in?

- Knowledge
- Abilities
- Capacities
- Values



#### 4. CONCLUSION

The process of negotiation regarding the Climate Change goes through a critical stage which accredited the consideration of different options for its reorientation to the effective achieving of agreements.

- The Conference of the Parts (COP), which took place in Copenhagen, Denmark, reached progresses in the negotiation group work without reach the adoption of any result multilaterally agreed.
- The results pursuing by the COP16 held in Mexico are hierarchical by order of ambition, and range from the adoption of a new legally binding instrument, to a simple reconstruction of the mutual trust enabling a breakthrough with regard to the inherited elements of Copenhagen.
- The result of the COP 16 was a balanced package of decisions called Cancun Agreements so, as per the United Nations, will promote the commitment of the nations to improve the actions related to the Climate Change and not to compromise its development.

The Universidad Autónoma de Coahuila, Mexico in its mission of being an entrepreneurial University, works and is making progress in activities that facilitate:

- Apply the profitability of a good environmental management in their classes and researches:
  - i. Study of methodologies of costs of emissions into the atmosphere, consumption of water, energy consumption and waste generation in particular in SMEs.
  - ii. Handling of the concept of eco-efficiency.
  - iii. Study and management of issues related to “Carbon bonds” and payments for “environmental services”.
- Incorporating in their studies competencies enabling graduates to acquire the knowledge, skills, abilities and values to design, establish, improve and measure aspects that help to mitigate climate change.
- It is necessary to design the work of environmental management in the territory related rather than environmental technology companies:

- i. Training in skills of the staff to respond to the requirements of the sustainable development strategy.
- ii. Design and implementation of sustainable development strategies customized in the community and consumers.
- iii. Commitments to the community to promote education and environmental awareness.

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