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## Evaluating of environmental condition of marun oil and gas production company (MOGPC) based on enabler criteria of european union's green management model

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### Abstract

Green management is a new management method to increase organizational capacity for dealing with environmental challenges. With the implementation of green management, organizations will be able to achieve sustainable development in economic, social and environmental areas. The green management model, which enjoys organizational excellence model (EFQM) approaches in its design, has 8 criteria: leadership, policy, organizational resources, organizational partners, process, economic results, social results and environmental results. The first five criteria are the company enablers. This is an experimental study about the implementation of green management model for a real case study in MOGPC for examining the enabler criteria of green management model in the company. The required data were collected through a questionnaire designed based on the model criteria and sub-criteria, field study and interviews with the company experts and managers. In this study, the highest score for enabler criteria belongs to the leadership criterion. This is due to the deployment of integrated management system and the management support of the system in the company. Lack of integrated responsibility, incomplete implementation and lack of direct monitoring for implementing green management are among the weaknesses of this system in the company. The study results showed that MOGPC is at the beginning of the implementation of the enabler criteria of green management model, and signs of green approach were observed in some criteria of green management model in the company.

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## Introduction

Each year, organizations are faced with billions of dollars of human, reputation and equipment losses due to workplace accidents and diseases and environmental pollution from their activities. These losses are the important barriers to development. Therefore, it is reasonable that management considers the aspects of safety, occupational and environmental health while regarding the other aspects of management such as quality, economy and finance, technology, and manufacturing because no improvement occurs in organizational performance without addressing these aspects (Abbaspoor *et al*, 2006).

studied the relationship between green management and environmental education in companies located in Brazil. The results showed that organizational culture, teamwork and high-level management support are factors affecting the relationship between management and environmental education. studied the role of social responsibility and environmental responsibility as an incentive for adopting environmental management by organizations. They concluded that law, organizational strategy and moral considerations (to a lesser extent) are incentives for adopting environmental management.

With the rapid growth of technology in the oil and gas industry, we are faced with increased occupational hazards and risks. To control these risks, we require a management system which reduces risks and ensures higher safety and welfare of employees and environmental protection (Abbaspoor *et al*, 2006). With an emphasis on environmental protection, today environmental management has become one of the most important issues for customers, shareholders, governments, employees and competitors, and global pressures have required organizations to produce eco-friendly products and services (Zanjirchi *et al*, 2013). The implementation of green management programs can be a basic solution to reduce emissions from energy consumption. In these programs, government organizations must meet all conditions of a green

organization. An organization can be regarded as a green organization when it continues its activities in a sustainable way with efficient and optimal use of resources and consumables without waste (Nazak *et al*, 2006). Green management is a new management strategy for increasing organizational capability including leadership, policy and strategy, organizational resources and processes which are necessary for sustainable development in economic, social and environmental areas (Haghighat Monfared and Madani, 2012).

Green management model, which enjoys organizational excellence model (EFQM) approaches in its design, helps organizations provide systematic excellence for the rights of their stakeholders by creating a platform for the participation of all stakeholders and assuming three key responsibilities (economic, social and environmental) (Haghighat Monfared and Madani, 2012).

The green management model has 8 criteria, 25 sub-criteria and 106 hints.

The first five criteria are the company enablers that lead to sustainable success of the company and the economic, social and environmental results.

Enabler criteria cover activities the organization do and how to do them. The result criteria refer to organizational achievements in the past and now, as well as those it plans to achieve in the future. Green management was established with the aim of improving and integrating organizational criteria. This model attempts to assess five criteria of leadership, strategy, organizational partners, organizational resources and processes (enablers) in order to improve the environmental, social and economic results (Haghighat Monfared and Madani, 2012).

Alves *et al*. (2012) studied the relationship between green management and environmental education in companies located in Brazil. The results showed that

organizational culture, teamwork and high-level management support are factors affecting the relationship between management and environmental education. Babiak and Trendafilu (2012) studied the role of social responsibility and environmental responsibility as an incentive for adopting environmental management by organizations. They concluded that law, organizational strategy and moral considerations (to a lesser extent) are incentives for adopting environmental management.

The Lam research team (2011) defined green principles, identified the reasons for implementing green principles and identified those environmental factors that cannot be handled only by adopting the EMS and require a new management system.

Zayma (2013) conducted a study called "Conditions for the deployment of green management in small and medium enterprises (SMEs) and the role of knowledge support: agent-based modeling." The purpose of this study was to determine an agent-based model for analyzing conditions that must exist to promote green management in the SMEs.

The study examined the situation of MOGPC in terms of enabler criteria of green management model and provided recommendations to improve the environmental management of the company.

## Materials and methods

### *ADLI system*

This research was carried out in 2014 by collecting desk and field data through participation in various sectors of MOGPC, interviews with experts, managers and heads of departments, recording the results, filling questionnaires, the use of existing documents and reports in the company and reputable authorities. For this purpose, a questionnaire was designed based on the model criteria and was distributed in the different units, thus needed information was obtained and criteria were evaluated according to the

questionnaires. The questionnaires were completed according to the logic of ADLI assessment.

ADLI is the process scoring system. The process refers to methods the company uses to improve and support the requirements of the model criteria. Four factors are used to evaluate the process: approach, deployment, learning and integration.

Each of the criteria of green management model must be evaluated in one or more departments. With access to the company's organizational chart, the units and departments in which each criterion should be measured were identified.

After completing the questionnaire and obtaining raw data from various sectors, organizational maturity was determined in order to understand the company's overall situation with respect to the model criteria. This logic measures the organization in four levels of maturity:

- a) Passive action against problems (0-25%).
- b) Starting systematic approach (30-45%)
- c) Aligned approaches (50-65%)
- d) Convergent approaches (70-100%)

This step helps us to understand the company's organizational maturity and not to deal with scattered scores when assessing.

### *ADLI logic*

The ADLI logic was used to evaluate the score of the enabler criteria. In the ADLI evaluation logic, the existence of a favorable phenomenon will not gain a score but support of the suitability of that phenomenon and its improvement will have scores.

For scoring, first, each of the sub-criteria hints are scored according to the hint table and each of the approach, deployment, learning and convergence factors are scored. Then the total score of the hint is obtained by dividing the sum of four factors by 4. Finally, the score obtained from the assessment logic is multiplied by n (the hint score of 1000) and is

divide by 100 to get the hint score. The score of any criterion is obtained by summing up the hint scores.

A sample criteria table, the scoring weight and the enabler criteria scoring table are listed below.

**Table 1.** Criteria, sub-criteria, hints and scoring weights.

	Criterion	Sub-criterion	Hints	Weight
Enablers	Leadership	4	14	120
	Policy and strategy	3	12	130
	Organizational resources	5	17	150
	Organizational partners	3	9	100
	Processes	4	19	200
Sustainable success	Environmental results	2	6	150
	Social results	2	15	60
	Economic results	2	14	90
Total of 8 criteria		25	106	1000

**Table 2.** Sample scoring table for the enabler criteria of green management model.

Score of 1000	Total score	Score from site visit				Score n of 1000	Hint NO.
		Convergence	Learning	Deployment	Approach		
3.00	40	20	35	50	55	7.5	1.1.1
1.50	20	5	15	20	40	7.5	2.1.1
3.56	47.5	30	35	55	70	7.5	3.1.1
1.69	22.5	10	20	25	35	7.5	4.1.1
9.75	32.5	Initial score					

Finally, the score obtained by each criterion is compared to the weight of that criterion. The overall score of MOGPC enablers is obtained from the total score of enabler criteria. If these enablers are met, the economic, social and environmental results will be obtained.

sub-criteria. The score for each criterion and the score documentation are as follows:

*Leadership criterion*

This criterion has 4 sub-criteria and MOGPC received a score 30.22 out of 120.

**Results and discussion**

After studying the MOGPC statement, the criteria were scored according to the ADLI logic and the enabler criteria scoring table. The scoring was done based on the company observations and documentation. If there were few observations and documents in a department for whatever reason (e.g., lack of cooperation by the relevant department), scoring was done according to the scoring observations. In case of the absence of documentation, no score was given to the relevant

Documents: The CEO of MOGPC expressed his support for environmental approach through approving the Integrated Management System Code of Conduct (including ISO 14000) and communicating it to all personnel in the organization. By participating in environmental programs such as Clean Air Day and Environment Week and describing the environmental programs and activities conducted in the enterprise as well as providing an integrated management system code of conduct by management representatives and providing different training for

the manpower HSE, MOGPC managers showed their support of environmental actions in the organization. The organization has used modern communication tools such as office automation system and organizational intranet for engagement and communication with human resources.

With the implementation of environmental projects, MOGPC managers showed their support of applying changes in order to achieve sustainable success.

Although the Integrated Management System Code of Conduct was developed and communicated by the CEO, it must be deployed in all parts of the company. The organizational approach reform, formation of technical and environmental and green management committees, improvement and sharing of reform and innovation with other business units and support and encourage of stakeholders by the leaders for environmental efforts can strengthen this green management criterion. As Alves *et al.* (2012) concluded, organizational culture, teamwork, and high-level management support are factors affecting the relationship between management and environmental education.

#### *Green policy and strategy*

This criterion includes 3 sub-criteria and MOGPC received a score of 29.36 out of 130.

Documents: Quality, health, safety and environment policy in the form of an integrated management system policy for quality, safety, health and environment was notified by the CEO and was communicated to all personnel. This policy is the driving force for implementation and improvement of an integrated management system. The policy has been brought to the attention of all staff in different ways such as briefings and installing in the workplace. With the help of planned objectives, it is tried to fulfill the goals contained in the policy.

With regard to environmental items in the organizational policy and strategy, there is a need for

a specific approach for developing and updating policy and strategy and creating a systematic approach for communicating environmental goals and programs to all stakeholders. Babiak and Trendafilu (2010) concluded that law, organizational strategy as well as ethical considerations (to a lesser extent) are incentives for adopting environmental management.

#### *Organizational resources*

This criterion has 5 sub-criteria and MOGPC received a score of 26.91 out of 150.

Documents: The existence of a participation system in the organization and the participation of more than ten percent of employees in this system.

The workgroups were formed according to the needs identified in the operational meetings. These workgroups consist of internal knowledgeable experts in relevant areas. In areas related to the environment, the environmental workgroup was formed.

The evaluation of the company leadership performance in support of knowledge-based activity, in terms of both internal evaluation (participation system) and external evaluation (annual presence in the MAKE World Award).

MOGPC was selected as Top 5 knowledge-based companies in the country in the Third World Award of MAKE.

The prizes award to the most knowledge-based people in safety, health and environment issues.

Although there are procedure(s) to promote human resources in MOGPC, it seems necessary to create a specific approach to promote human resources for achieving sustainable success, altering required platforms for empowering human resources through the evaluation and improvement cycle and/or sharing the reform and innovation with other units and related processes.

*Organizational partners*

This criterion has 3 sub-criteria and MOGPC received a score of 20.28 out of 100.

Documents: MOGPC attaches a summary of HSE manual for execution to its contracts with contractors.

*Developing a procedure to evaluate suppliers*

*Management support of the new communication approaches to the organization's partners such as website*

Inviting empowered customers to gain knowledge of the customer and create value, to consult and use their knowledge, on organizational needs.

Although there is communication between the organization and many partners including suppliers, there is no specific approach to identify and analyze the needs, expectations and standards for producing green products and services. There is an approach for encouraging partners, and appropriate actions have been implemented, but it must be systematically deployed at all levels of contractors.

*Green processes*

This criterion has 4 sub-criteria and MOGPC received a score of 37.60 out of 200.

Documents: MOGPC identified its processes in the integrated management system (including ISO 14001 standard). The company set the measuring and monitoring indicators and criteria for various processes and continuously monitors and analyzes them.

The company website contains information on environmental issues and environmental projects related to the goods and services for the use of visitors including customers.

Although MOGPC has set environmental goals in some organization processes, there is no specific approach to ensure environmental goals in all processes. In MOGPC, appropriate actions have been

carried out for assessing the potential effects of activities on the environment, but there was no evidence of the deployment of such actions on all activities in the organization and there is a need for deployment of these actions on all the organizational activities.

The results of a study by Asli Zadeh *et al.* (2012) confirmed the results of this study that there is a relationship between green supply chain and productivity.

**Conclusion**

The results of this study showed that MOGPC is at the beginning of the way of implementing the criteria of green management model and there are signs of green approach in some criteria of green management model in the company. In this study, the highest score for enabler criteria belongs to the leadership criterion due to the deployment of integrated management system and the management support of the system in the company.

According to the study results, it appears that MOGPC must consider the system for all components of the organization if it wants to have a more efficient green management system. Moreover, a green management accountability system is necessary for assessing the real benefits of actions taken for green management. Finally, green management should be implemented at the national level in order to maximize the benefits of this project for the country.

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