



Environmental Management Best-Practice & Strategies within the Institutional Context: The Case of United Arab Emirates

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Abstract

Environmental management is the processes, strategies and procedures that regulate the way organizations achieve their goals by mitigating negative environmental impacts, utilizing resources efficiently, rising resource consumption. The weak system of environmental management (EM) may lead to dangerous emissions, which indeed has many and wide-ranging consequences. The exploitation of natural resources and various economic sector growth harm the environmental system of the United Arab Emirates (UAE). This research intends to examine the best practices and approaches used by the UAE government to address the problem of economic growth and protection of the environment in the institutional context. It also explores EM's strategic perspective in the UAE and how the Communities of practice (COPs) view the EM, whether it occurs in the UAE community, strategies policies, programs funding opportunities. And if informal/formal support for engagement activities underlines the ability to develop a strong community engagement program. Data have been gathered through a questionnaire from COPs, formal and informal social networks and expertise who have similar work-related activities and interests in environmental management.

Keywords: UAE, Environmental Management, Community Engagement Program

1 Introduction

The management of environmental conditions around the world has recently received a great deal of interest and debate. For business, the climate has become a critical issue (1). Most of the countries have established policies, goals, strategies, programs, and action plans on environmental management to protect their environment. Environmental protection has become an important part of corporate social responsibility (2). For example, the government of Malaysia has implemented many environmental management initiatives, including the development of an urban environmental management programme (3). There are various rules and regulations for the management and protection of their environment in many countries; Germany has around 35,000 environmental regulations (4). A recent study showed that the number of companies in Hungary with EMS certification in early 2005 has risen quickly to over 800 (5).

The challenges of environmental management in African Countries are entirely different from the rest of the world. In Zimbabwe for instance, the legislation was split and obsolete with insufficient human and financial resources for the implementation of the EMS (6).

The best practice in environmental management has many benefits such as allowing government to protect the environment and at the same time reduce costs (7). To understand the importance of environmental management best practice and strategies, this study examined the best practice and strategies in UAE within its institutional context. The primary objective of this paper is to investigate the best practice and strategies that used by UAE government. UAE is one of those countries that adopt the green economy strategy to sustain economic growth (8).

2 Literature Review

Environmental Management is regarded as one of the most dynamic perspective that has received large controversy about its importance to society. The corporate approach to environmental protection has changed from a regulatory reactive mode to a more collaborative management style that combines environmental concerns with conventional managers' functions themes (9).

There is no consensus to describe environmental management with many different environmental management ideas. It has been mentioned that the complex and dynamic

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nature of environmental problems requires flexible and transparent decision-making that embraces a diversity of knowledge and values (10). While define environmental management as any administrative functions that develop, implement, and monitor the environmental policy of an organization (11). Although a consistent and objective concept of environmental management is being made, some confusions still remain about how to interpret environmental management (12).

The confusions about (environmental management) derive from the two extreme definitions one that is very narrowly defined by Sinding as the company has the full environmental impact of its actions, both in thinking and in practice (13). In other words inter-organizational environmental management involves learning about the environmental impacts through the supply chain and life cycle of products, and interacting with firms or organization in the supply chain to reduce these impacts. The broad definition suggested by GRUMBINE “Ecosystem Management Integrates scientific knowledge of ecological relationships within a dynamic socio-political framework and values towards the overall objective of long-term preservation of the integrity of native ecosystems” (14). In his book “Environmental Management: Principles and Practice” Barrow identified several characteristics for environmental management such as:

- It is often used as a generic term;
- It supports sustainable development;
- It deals with a world affected by humans (there are few, if any, wholly natural environments today);
- It demands a multidisciplinary or interdisciplinary approach;
- It has to integrate different development viewpoints;
- It seeks to integrate science, social science, policy making and planning;
- It recognizes the desirability of meeting, and if possible exceeding basic human needs;
- The timescale involved extends beyond the short term, and concern ranges from local to global;
- It should show opportunities as well as address threats and problems;
- It stresses stewardship, rather than exploitation (15).

Harger & Meyer (1996) have concluded that the metrics of environmentally sound and sustainable development (ESSD)

for the evaluation of program and project outcomes are now very relevant for defining environmental change in developing and developed countries (16).

Mihalič, on the other hand, adds another dimension to environmental management than that of environmental quality, which refers to the quality of the natural features of the destination that could be impaired by human activities (17). Natural features like beautiful scenery, natural hydrologic structures, clean water, fresh air and species diversity can suffer from pollution and therefore lose their attractiveness.

Four hypotheses are developed on the basis of the above discussion to understand how UAE implements best practices and environmental management approaches within the institutional context (Philip & Margaret Identified EM Costs and Benefits) (18):

- H1: There is a clear line of Environmental Management Strategies in UAE
- H2: Business Firms in UAE response to environmental concern through integrated the Environmental Management into business structure and systems
- H3: Sustainable Development is an important driver for UAE to engage in Environmental Management
- H4: Accountability and compliance with International Environmental Standard & Principles is the Best Practice in Environmental Management in UAE

2.1 Environmental Management in UAE

There is a growing awareness with environmental issues and climate change in UAE. The greatest contribution to Environmental Management of UAE government comes from it is (UAE VISION 2021) which state that “The UAE Government wants to ensure sustainable development while preserving the environment, and to achieve a perfect balance between economic and social development”. To do that, the UAE Vision 2021 National Agenda focuses on improving the quality of air, preserving water resources, increasing the contribution of clean energy and implementing green growth plans (19). Considered as an Institutional context for environmental management, the transfer of character, programs, funding opportunities and informal / formal support for engagement activities will underpin the ability to create a strong community engagement program.

Table 1: shows the EM Costs and Benefits

POTENTIAL COSTS	POTENTIAL BENEFITS
Internal	• Improved environmental performance
• Staff (manager) time	• Enhanced compliance
• Other employee time	• Prevention of pollution/resource conservation
(Note: Internal labor costs represent the bulk of the EMS resources expended by most organizations)	• New customers / markets
External	• Increased efficiency / reduced costs
• Potential consulting assistance	• Enhanced employee morale
• Outside training of personnel	• Enhanced image with public, regulators, lenders, investors
	• Employee awareness of environmental issues and responsibilities

Table 2: Below shows Sustainable Environment Key Performance Indicators

INDICATOR	DEFINITION	SOURCE	2012 RESULTS	2021 TARGETS	KEY SPONSOR
Air Quality Index	An indicator that measures the quality of air in terms of supplying daily information on pollution and the negative effects it may have on human health. The indicator measures the (4) main air pollutants: nitrogen dioxide, carbon monoxide, sulphur dioxide, ozone	Ministry of Climate Change and Environment in coordination with the National Center for Meteorology & Seismology	65.30% (2015)	90%	Ministry of Climate Change and Environment
Percentage of Treated Waste of Total Waste Generated	An indicator that measures the percentage of treated waste out of the total generated waste (solid municipal waste) using various treatment methods (recycling, incineration, waste-to-energy, chemical treatment, exporting for external treatment, except for the landfill), in line with the methodology used by the OECD.	Ministry of Climate Change and Environment in coordination with the Federal Competitiveness and Statistics Authority	20.77% (2015)	75%	Ministry of Climate Change and Environment
Share of Clean Energy Contribution	An indicator that measures the contribution of clean energy sources (renewable, nuclear) to the total energy mix	Ministry of Energy	0.23% (2015)	27%	Energy Contribution Ministry of Energy
Water Scarcity Index	An indicator that measures water overuse by monitoring fresh water usage (including surface water, renewable water and fossil water) as a percentage of overall renewable water in the UAE. The result is weighted to take into account desalination and waste water treatment.	Ministry of Energy	Ratio of 6.95 (2015)	Ratio of 4.0	Ministry of Energy

Source: National key performance indicators (19)

3 Data and Methodology

The sample used to examine the hypotheses of this paper consists of 55 formal and informal social networks of experts with similar activities and interests in environmental management known as COPs. Survey questionnaires reflecting all research areas have been used as an instrument for collecting data using a five-point Likert scale, ranging from strongly agree, agree, neutral, disagree, to strongly disagree to determine the response of the participant.

The first part of the questionnaire covers personal information, which includes five questions about gender, age, highest qualification, specialty and position in Communities of practice (COPs). While the second part includes 14 questions regarding the opinion of the participant on Environmental Management Best-practice & Strategies within the Institutional Context. The third part of questionnaire concerns ordering the factors would be important as driver for UAE to engage in Environmental Management according to the participant's views, and ordering factors would be important to them as Best Practice in Environmental Management. The participant scores on a five-point scale with "5" being "very low" and "1" very high. The fourth part of the questionnaire is opened for the participant's suggestion on Environmental Management Best-practice & Strategies.

3.1 Data Analysis

A descriptive statistical method, SPSS, was used to analyze the data collected. To test the hypotheses, ANOVA test was performed. Hypotheses have been tested to analyze

whether there is a clear line of environmental management approaches in the UAE and companies in the UAE reacting to environmental concerns through the incorporation of environmental management into business structures and systems. Seventy (70) questionnaires were distributed and 55 have been returned with 79% response rate. Cronbach's alpha is used for the calculation of internal consistency as a statistical instrument for assessing the reliability of survey or testing products built for measuring the same structure. This method is widely employed, because it uses a great deal of information about the items in questions and their correlations (20).

The reliability (Cronbach's alpha) of this instrument was acceptable at 0.86 based on the standardized item at 0.90 and the number of items at 14 indicates that the measuring instruments are capable of consistently measuring the same construct (Table 3). The reliability in this case considered highly significant because it's more than 0.7

Table (4) shows that 37 of the participants (67.3 %) are female, while 18 are male (32.7%). The previous information also was illustrated in Figure 1. Table 5 also shows that 33 of the participants (60 %) held the Emirati Nationality among others 22 (40 %) were from different nationalities, such as Egyptian, Indian, Jordanian, Iraqi, New Zealand, Pakistani, Sudanese, Syrian, and Tunisian. As can be seen in Table 6, the large majority of participants (60 %) had a bachelor degree, 9 had Master Degree (16.4%), while the PhD degree participants were 7 (12.7 %), and higher school 5 (9.1%). Table 7 also shows that the most selected position in Communities of practice (COPs) is the Environmental Expert and the least one was Environmental Project Manager 18 of the participants

(32.7%) held the title of Environmental Expert (6.8%) were Environmental Project Manager. Respondents' views as to whether there is a clear line of Environmental Management Strategies in UAE, and Business Firms in UAE response to

environmental concern through integrated the Environmental Management into business structure and systems, are shown in Table 8.

Table 3: Reliability Statistics Cronbach's alpha Cronbach's alpha based on standardized item

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.860	0.866	14

Table 4: Descriptive Statistics of Data Collected

Valid		Frequency	Percent
	Female	37	67.3
	Male	18	32.7
	Total	55	100.0

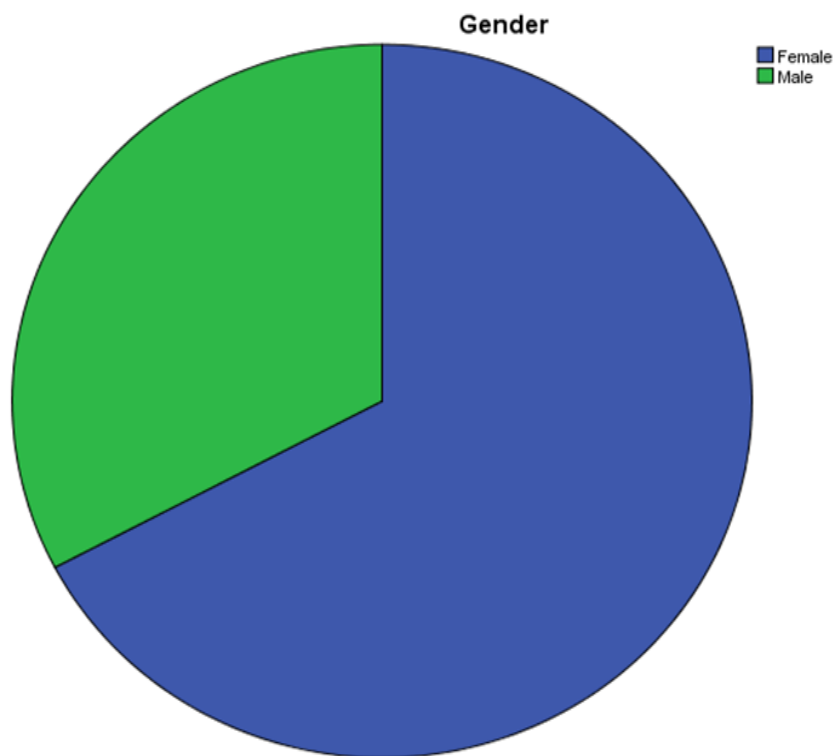


Figure 1: Descriptive Statistics of Data Collected

Table 5: Nationality

		Frequency	Percent
Valid	Missing	2	3.6
	Egyptian	6	10.9
	Emirati	33	60.0
	Indian	2	3.6
	Jordanian	3	5.4
	Iraqi	1	1.8
	new Zealand	1	1.8
	Pakistani	1	1.8
	Sudanese	2	3.6
	Syrian	1	1.8
	Tunisian	3	5.5
	Total	55	100.0

Table 6: Highest Qualification

		Frequency	Percent
Valid	Secondary school	5	9.1
	Bachelor's Degree	33	60.0
	Master Degree	9	16.4
	PhD	7	12.7
	Total	54	98.2
Missing	System	1	1.8
Total		55	100.0

Table 7: Position in Communities of Practice (COPs)

Practice	frequency	Percentage
Environmental Practitioner	7	12.7%
Environmental Engineering	12	21.8%
Environmental Specialist	11	20.0%
Environmental Researcher	10	18.2%
Environmental Project Manager	2	3.6%
Environmental Consultant	4	7.3%
Environmental Expert	18	32.7%

Table 8: Attitudes towards the Environmental Management Best-practice & Strategies in UAE

No.	OPINION	SA	AG	UN	DA	SD
1	I believe that there is a clear line of Environmental Management Strategies in UAE	23.6%	69.1%	3.6%	3.6%	0.0%
2	I believe that there is a clear Governance for Environmental Management in UAE	25.5%	61.8%	9.1%	1.8%	0.0%
3	I believe that there is shared responsibilities across the stakeholders for Environmental Management	16.4%	58.2%	14.5%	7.3%	0.0%
4	I believe that there is higher coordination and collaboration between Federal and Local Government	20.0%	52.7%	20.0%	3.6%	3.6%
5	I believe that there is a clear Environmental Management tools in UAE such as organized of set activities, actions, process	23.6%	61.8%	10.9%	1.8%	0.0%
6	I believe that there is a general awareness training program provided to UAE communities	12.7%	67.3%	10.9%	5.5%	3.6%
7	I believe that there is a clear Public Involvement plans implemented in UAE	18.2%	49.1%	21.8%	10.9%	0.0%
8	I believe that there is a one of the most important environmental management used is pollution control and pollution prevention	16.4%	50.9%	21.8%	9.1%	0.0%
9	I believe that UAE environmental strategy aims to minimize its contribution to climate change	36.4%	50.9%	9.1%	1.8%	0.0%
10	I believe that Business Firms in UAE response to environmental concern through observing legal requirement	14.5%	72.7%	10.9%	1.8%	0.0%
11	I believe Business Firms in UAE response to environmental concern through integrated the Environmental Management into business structure and systems	9.1%	81.8%	7.3%	1.8%	0.0%
12	I believe that Business Firms in UAE response to environmental concern through achieve environmental & business excellence	12.7%	65.5%	14.5%	5.5%	1.8%
13	I believe that Business Firms in UAE response to environmental concern through improve and use efficiency by control resources and use high efficient technology	16.4%	58.2%	20.0%	3.6%	1.8%
14	I believe that Business Firms in UAE response to environmental concern through invest in cost – efficient renewable energy systems	18.2%	52.7%	18.2%	7.3%	1.8%

In the above table there is a percentage summary for all the responses of all the participants. It can be seen that almost in all the questions the participants opinion was either strongly agree or agree. The majority of the respondents (92.7%) agreed that there is a clear line of Environmental Management Strategies in UAE, (87.3%) said that there is a clear Governance for Environmental Management in UAE, there is a general awareness training program provided to UAE communities, UAE environmental strategy aims to minimize its contribution to climate change, which proves the hypothesis of There is a clear line of Environmental Management Strategies in UAE.

Seventy-Eight percent of participants agreed that Business Firms in UAE response to environmental concern through observing legal requirement, while (90%) of participants agreed that the Business Firms in UAE response to environmental concern through integrated the Environmental Management into business structure and systems. Seventy-Eight percent of (COPs) knew that Business Firms in UAE response to environmental concern through achieve environmental & business excellence; (74.6%) of them also agreed that Business Firms in UAE response to environmental concern through improve and use efficiency by control resources and use high efficient technology, while (71%) agreed that Business Firms in UAE response to environmental concern through invest in cost – efficient

renewable energy systems, which proves the hypothesis of that Business Firms in UAE response to environmental concern through integrated the Environmental Management into business structure and systems. From the above table one can see how the participant considered the importance of their opinion according to the Mean of their answers and the Ranks column (the item with more rank is the more important Item). The above table shows the overall mean and variance for part two questions, and it gives positive indication that almost all the participant agree with all the points. It can be observed in the ANOVA table that there was consistency between the Items between the participant and within the participant where the P-value = 0.00 with is less than 0.05. The third part of questionnaire is used to know the important driver for UAE to engage in Environmental Management, as well as the important Best Practice in Environmental Management. The participants score on a five-point scale with “5” being “very low” and “1” very high. According to the participants’ views, the order of some driver for UAE to engage in environmental management according to their importance comes as follows:

- First: Sustainable Development;
- Second: Environmental Initiatives;
- Third: National Policy Framework;
- Fourth: International Policy Framework;
- Fifth: Climate Change.

Table 9: Mean and Std Deviation for participant response

Opinion	Mean	Std. Deviation	Rank
I believe that there is a clear line of Environmental Management Strategies in UAE	4.13	0.64	13
I believe that there is a clear Governance for Environmental Management in UAE	4.05	0.848	12
I believe that there is shared responsibilities across the stakeholders for Environmental Management	3.73	1.062	2
I believe that there is higher coordination and collaboration between Federal and Local Government	3.82	0.925	7
I believe that there is a clear Environmental Management tools in UAE such as organized of set activities, actions, process	4.02	0.85	11
I believe that there is a general awareness training program provided to UAE communities	3.8	0.869	5
I believe that there is a clear Public Involvement plans implemented in UAE	3.75	0.886	4
I believe that there is a one of the most important environmental management used is pollution control and pollution prevention	3.69	0.979	1
I believe that UAE environmental strategy aims to minimize its contribution to climate change	4.24	0.699	14
I believe that Business Firms in UAE response to environmental concern through observing legal requirement	3.96	0.744	9
I believe Business Firms in UAE response to environmental concern through integrated the Environmental Management into business structure and systems	3.98	0.49	10
I believe that Business Firms in UAE response to environmental concern through achieve environmental & business excellence	3.8	0.869	6
I believe that Business Firms in UAE response to environmental concern through improve and use efficiency by control resources and use high efficient technology	3.82	0.884	8
I believe that Business Firms in UAE response to environmental concern through invest in cost – efficient renewable energy systems	3.73	1.027	3

Table 10: variance for questions

	Mean	Variance	N of Items
Item Means	3.893	.030	14

Table 11: ANOVA with Friedman's Test and Tukey's Test

		Sum of Squares		df	Mean Square	Friedman's Chi-Square	Sig
Between People		195.107		53	3.681		
Within People	Between Items	20.784		13	1.599	3.108	0.00
	Residual	Nonadditivity	7.177 ^a	1	7.177	14.22	.000 ^a
		Balance	347.253	688	0.505		
		Total	354.43	689	0.514		
	Total	375.214		702	0.534		
Total		570.321		755	0.755		

Table 12: Participant's ordering for some driver for UAE to engage in Environmental Management According to Their Importance

No.	UAE drive to engage in Environmental Management	Rank Mean	Rank
1	Climate Change	3.07	5
2	International Policy Framework	3.55	4
3	National Policy Framework	2.78	2
4	Sustainable Development	2.2	1
5	Environmental Initiatives	2.84	3

Table 13: Participant's ordering for Some Best Practice in Environmental Management According to Their Importance

No.	UAE Best Practice in Environmental Management	Rank Mean	Rank
1	Go Green	2.4	1
2	Environmental Innovations	2.96	2.5
3	Gives award for Environmental Management best practice	3.04	4
4	Accountability and compliance with International Environmental Standard & Principles	2.96	2.5
5	Continual Improvement	3.36	5

While order Best Practice in Environmental Management According to Their Importance as follows:

- First: Go Green;
- Second: Accountability and compliance with International Environmental Standard & Principles;
- Third: Environmental Innovations;
- Fourth: Gives award for Environmental Management best practice;
- Fifth: Continual Improvement

4 Conclusion

The main objective of this paper is to examine the best practices and strategies used in the institutional context by the UAE government to deal with the dilemma of economic growth and environmental protection. Three of the designed hypotheses have been accepted, indicating that there is a clear line of Environmental Management Strategies in the UAE in response to Environmental Management for business firms in the UAE. There is a concern through integrated the Environmental Management into business structure and systems. Participant agreed that Sustainable Development is an important driver for UAE to engage in Environmental Management. The hypothesis of Accountability and compliance with International Environmental Standard & Principles is Best Practice in Environmental Management in UAE is rejected, since the order of the participant Go Green First.

References

- Walton SV, Handfield RB, Melnyk SA. The green supply chain: integrating suppliers into environmental management processes. *International journal of purchasing and materials management*. 1998 Mar;34(1):2-11.
- Chen FY. Managers' Views on Environmental Management: An Examination of the Taiwanese Airline Industry. *Journal of sustainable development*. 2013 Jan 1;6(1):65.
- Ismail H, Hussain TP, Noh MK, Subhan M. Community Involvement in Urban Environmental Management System. *Asian Social Science*. 2015 Jun 1;11(12):62.
- Watson M. Protecting the environment: the role of environmental management systems. *The journal of the Royal Society for the Promotion of Health*. 2006 Nov;126(6):280-4.
- Malovics G, Racz G, Kraus S. The role of environmental management systems in Hungary—Theoretical and empirical insights. *Journal for East European management studies*. 2007 Jan 1;180-204.
- Jerie S, Rajah D, Rajah N. Challenges in implementing an integrated environmental management approach in Zimbabwe. *Journal of Emerging Trends in Economics and Management Sciences*. 2012 Aug 1;3(4):408-14.
- Christmann P. Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *Academy of Management journal*. 2000 Aug 1;43(4):663-80.
- Green Economy Report 2016. Retrieved from http://www.moccae.gov.ae/assets/644fa89a/state-of-green-economy-report-2016_summary
- Khanna M, Anton WR. Corporate environmental management: regulatory and market-based incentives. *Land economics*. 2002 Nov 1;78(4):539-58.
- Reed MS. Stakeholder participation for environmental management: a literature review. *Biological conservation*. 2008 Oct 1;141(10):2417-31.
- Business Dictionary (2017). Retrieved from <http://www.businessdictionary.com/definition/environmental-management.html>.
- Morelli J. Environmental sustainability: A definition for environmental professionals. *Journal of environmental sustainability*. 2011;1(1):2.
- Sinding K. Environmental management beyond the boundaries of the firm: definitions and constraints. *Business strategy and the environment*. 2000 Mar;9(2):79-91.
- Edward GR. What is ecosystem management. *Conservation biology*. 1994 Mar;8(1):27-38.
- Barrow CJ. *Environmental management: principles and practice*. Psychology Press; 1999.
- Harger J.R.E, Meyer F. Definition of indicators for environmentally sustainable development Original Research Article, *Chemosphere*, 1996;33(9):1749-177
- Mihalič T. Environmental management of a tourist destination: A factor of tourism competitiveness. *Tourism management*. 2000 Feb 1;21(1):65-78.
- Stapleton PJ, Glover MA, Dvis PS. *Environmental management systems: an implementation guide for small & medium sized organizations*. NSF; 2001.
- UAE VISION 2021. Retrieved from https://www.vision2021.ae/sites/default/files/pmo_emirates_in_numbers_brochure-optimized.pdf
- Bryman A. *Research methods and organization studies*. Routledge; 2003 Sep 2.