Documentation of Environmental Disclosure Practices in the Oil Companies in the Countries of the Arab Spring – Some Evidences from Egypt, Libya and Tunisia

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Abstract—This study aims to document the environmental disclosure practices in the Arab Spring countries, Egypt, Libya and Tunisia. These countries have been witnessed a changes in governance systems as a result of massive popular revolutions in 2011 in what became known revolutions of the Arab Spring. These revolutions have been influenced on political and legal systems and economic development of these countries. As a result, due of the accounting system interacts with surrounding systems; the changes of systems may affect the accounting system thus accounting practices, including environmental disclosure practices that may be affected. Therefore, this paper seeks to document the environmental disclosure practices in the oil companies for the three years that preceded the Arab Spring revolution. As result, it will contribute in comparisons for the accounting practices of companies after the success of the Arab Spring uprisings in Egypt, Libya and Tunisia. Content analysis and environmental disclosure index are used to measure the quantity and quality of environmental disclosure in companies operating in the oil sector. This study included the annual reports for the years 2008, 2009 and 2010. The results of the study indicated how accounting information contained in the annual reports before Arab spring.

Index Terms—Environmental disclosure, spring Arab revaluation, Tunisia, Egypt, Libya.

I. INTRODUCTION

Over last two decades, environmental activities and environmental issues have increased in companies especially operating in environmentally sensitive industries such as petroleum industry. These issues have emerged as more prominent economic, social and political problems throughout the world [1], [2]. Therefore, the environmental accounting has attracted international communities and environmental bodies for its role in increasing transparency and disclosure in corporations about these environmental activities and environmental issues. This, in turn, has created the attention to international corporations to environmental accounting in order to demonstrate their activities and practices in particular with regard to the environment [3]. Nevertheless, there are many environmental calamities resulting of companies’ activities especially in petroleum industry which affect surrounding environment of companies’ operations such as spilling oil, oil tankers collided and exploding fuel tanks [4]. These environmental disasters and other incidents caused an increase in public concern from the community towards companies [3], [5]. Despite the environmental disasters that surround the oil industry, many international companies seek to invest in this sector in more than one country, which has huge oil wealth. Furthermore, growing operations of international firms in more than country contributed to the increase pressures on these companies [6]. Therefore, international companies may be faced many problems when disclosing environmental information in host countries because of the variation in the economic conditions and government regulations in those countries where they operate as well the growing role of national companies in host countries [7]. In this context, [3] reported that when conflict arises between international companies and local communities regarding disclose of environmental activities, international companies must adopt clear strategies for the disclosure of environmental activities as a result of industrial operations, whether its operations are in developed countries or developing countries and take into account any conflict and pressures in those countries. Moreover, it is becoming increasingly difficult ignore changes in regimes in countries.

Presently, researchers have argued that changes in regimes in countries influences different systems such as political and legal systems, economic system, thus it reflects on accounting systems in country [1], [8], [9]. Furthermore, economic diversification necessitated many international companies to invest in different countries included developed countries. Many international companies seek to benefit from the existing resources in developing countries consequently; companies seek to make huge investments in these countries [10], [11]. In the Arab region witnessed the Arab Spring revolution in some countries such as Tunisia, Egypt and Libya which led to change in regimes in these countries which effect on political system, legal system as well ceased the activities of some international companies, particularly with regard to oil companies. The new governments seek to develop their systems in line with global developments in the political and economic systems. The oil sector is one of the most important economic sectors in these countries. This sector attracts many petroleum corporations from different countries.

The resources of oil contribute to economic and social development in these countries. The oil sector in countries of Arab petroleum exporting has witnessed a remarkable development in recent decades. In the last ten years and with increase in investments by foreign companies in oil sector, the daily production rate of crude oil has increased. Therefore, the oil sector in those these countries contributes to the state’s revenue, which was approximately between 85% and 95% in
most of these countries in last decades [12]. These International firms have played an important role in the development of the oil sector in these countries and contributed to significant contributions in the development of oil sector. These contributions have reflected positively on the national companies. Since two last decades, the national companies have become the main driver of the oil sector in the Arab countries. Therefore, there a discrepancy became in accounting practices between global corporations and national companies in addressing many of the accounting issues.

Therefore, this study aims to examine environmental disclosure practices in national oil and gas corporations in Tunisia, Egypt and Libya. The main idea of this study is to document the practices of environmental disclosure in annual reports in these three countries in order to contribute to the future comparisons in accounting practices before and after the change in the regimes and their impact on these practices as well as comparing with accounting practices in international firms. The main question has been designed as following: What is the extent of environmental disclosure among the national oil companies in Tunisia, Egypt and Libya?

II. LITERATURE REVIEW

In last two decades, the accounting literature has witnessed a growth in the number of studies regarding corporate environmental disclosure. During this period, social and environmental studies have used theoretical frameworks, such as stakeholder theory and legitimacy theory and the theory of political economy. Moreover, content analysis has become a main method in several studies to analyse annual reports regarding the social and environmental disclosure [13]-[16]. In addition, these studies have sought to examine changes, which occur in organizations as a result of social and environmental accounting in terms of explaining the social and environmental reporting practices, and setting some interpretations, which are compatible with these changes. Also, in this period, many studies have been conducted on examining the motivations and determinants of social and environmental disclosure practices [17], [18].

The developed countries have conducted most of the studies of social and environmental disclosure over the past two decades, while developing countries have had a handful of studies, in particular on the countries with emerging economies [19]-[22]. The studies have been conducted in India by [23], [24] and in Malaysia and Singapore by [2], [22], [25] and by [26], [27] in Korea. It can been said that most of these studies conducted in east Asia have concluded that environmental disclosure is inadequate as compared to developed countries and the reactions are bad toward these environmental laws.

In the context of Africa, there are few studies that have conducted social and environmental disclosure, such as [28] who examined 115 firms in South Africa and concluded that average disclosure was a half-page. In another study by [29] in Uganda, it was noted that the level of disclosure was low. In addition, environmental disclosure has been conducted in MNCs in a study by [30] in Nigeria. The finding of this study indicated that there is little interest for environmental disclosure in annual reports of the study sample, which included 22 companies during 1994 and 1995.

In comparison, research that has been done on social and environmental in the Arab regions remains scant, but there are some attempts for example, [31] examined the social and environmental disclosure in 68 firms in nine countries of Arabia’s Middle East namely: Bahrain, Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syria, and United Arab Emirates, as well as in Bahrain by Al-Bastaki and Joshi; 2000, in Saudi Arabia by [32], [33] as well as in Jordan by [34], [35]. In addition, [36] examined the effects of some characteristics of firms on levels of environmental disclosure listed in markets in Qatar. Reference [37] investigated the social and environmental disclosure in 60 firms in the Egyptian industry sector, while in Libya and Tunisia, [32], [38], [39] examined the relationship between levels of disclosure and environmental performance through the local companies industrial and financial sectors respectively. The findings of these studies suggest that the levels of disclosure are low and this has a negative effect on environmental performance. Moreover, there are other factors that have affected environmental disclosure such as political and economic systems that have been influenced by the period of colonialism. Therefore, a lack of research particularly in the Arab region, including Libya is the motivation for this study. Study of environmental disclosure in Libya has not yet been adequate and there is a set of circumstances and problems surrounding multinational companies operating in Libya, which influence processes of environmental disclosure. Further, in Libya, as an example, the political system depends on the “Third Universal Theory” of the green book. As a result, Libya witnessed a big change in the economic during last few years and addition it has a unique political system in the world.

Environmental disclosures in multi-national companies (MNC) have been mentioned in the literature whereby, there are many studies on environmental disclosure and the various activities undertaken by multinational companies [1]. Multi-national companies are under pressure and scrutiny from domestic competitors where they face institutional pressures from stakeholders such as governments, customers and from within their own industry, to present environmental communication, in order to be deemed environmentally legitimate. The stern requirements in MNCs are cause for more disclosure. In contrast, most research does not mention the impact the MNCs have on their subsidiaries or about procedures of the disclosure which subsidiaries operating in such as an environment different to the environment’ work of the parent company, although, subsidiaries do have influence on their parent firm’s legitimacy [40].

III. JUSTIFICATIONS OF STUDY

The majority of previous research has focused on environmental disclosure for companies to in developed countries such as Canada, Australia, New Zealand, and the United States, the United Kingdom, and Japan. Moreover, most experienced international companies who are belong to the developed countries, and therefore an increase in the
detection of environmental. Unlike developing countries, including in the Arab region, despite the fact that most of its subsidiaries operating in developing countries. On the other hand, sample countries in this study have witnessed changes in their government regimes unlike developed countries which are characterized by relative stability in their systems of governance. Therefore, this study explores the environmental disclosure practices and environmental level of disclosure in the Arab Spring countries to document these practices before changes in governments that may affect their political, legal and economic systems.

IV. METHODOLOGY

This study investigates the extent and content of environmental disclosure in annual reports of local oil and gas corporations operating in the Arab Spring Countries such as Tunisia, Egypt and Libya. Content analysis using word count as a unit of measurement is used to measure quantity of environmental disclosure while environmental disclosure index is used to measure quality of environmental disclosure. It is worth noting that these methods have been used by many researchers in their studies to examine environmental disclosure. Along similar lines [41], [42] and [43], [44] who have used word as a unit of measurement in content analysis to determine level of environmental disclosure in annual reports. Thereby supporting the study to use word count, [45] justified use of words as a unit of measurement, because it provided a greater amount of detailed description. Moreover, the application of words in business research allows the provided a greater amount of detailed description. Moreover, the application of words in business research allows the analysis to be more precise and defined upon identification of the subject matter being sought (Ahmad 2004). While, in next part of measurement, the quality of environmental disclosure was measured using environmental disclosure index. This measurement technique derived from content analysis [46]. Many studies have adopted this technique in measuring the quality of disclosure, such as [33], [47].

Based on previous studies, there are 16 items that can be used in this study to categorise environmental information in annual reports. Therefore, in order to measure the quality of environmental disclosure of items shown in table. This study assigns the greatest weight (+3) to monetary disclosures related to the environmental items, and assigns the next highest weight (+2) to quantitative. Finally, general disclosure receives the lowest weight (+1). Firms that do not disclose information for a given indicator receive a score of zero for that item. Thus, a total score of each company equal 48 score. In other word, the highest quality of environmental disclosure is 48 while the lowest quality is zero.

The data needed for this study were collected from the company annual reports of for the years 2008, 2009 and 2010. The sample in present study included oil and gas companies operating in Sparing Arab Countries such as Egypt, Libya and Tunisia. These countries are members of the Organization of Arab Petroleum Exporting Countries (OAPEC) which includes 11 countries are Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Bahrain, Iraq, Syria, Egypt, Libya, Tunisia and Algeria. Annual reports published have collected from the websites of the Egyptian and Tunisian companies while the annual reports of Libyan companies have collected from the company's offices in Libya.

V. FINDINGS

A. Descriptive Analysis

This study sought to examine the annual reports for 2008, 2009 and 2010 of 23 oil and gas companies. Table I illustrates number of target companies in these countries. It also represents number of companies that publish their annual reports on the websites. With regard to the Libyan companies, the researcher could not get the annual reports of some companies due to the difficulty of visiting the company's offices during the war of liberation in 2011. From Table I, it can be noted that Tunisia has the lowest rate of the number of companies that met the requirements of study by 33%, where the number of companies targeted are 6 companies, whereas there are only two companies provide annual reports according to the conditions in this study. In contrast, Libya has the highest percentage of companies that met the conditions of the study where the percentage of these companies is 55%.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of target companies</th>
<th>Number of selected companies</th>
<th>Response rate percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>8</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>Libya</td>
<td>9</td>
<td>5</td>
<td>55.56</td>
</tr>
<tr>
<td>Tunisia</td>
<td>6</td>
<td>3</td>
<td>33.33</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>12</td>
<td>52.17</td>
</tr>
</tbody>
</table>

B. The Quantity of Environmental Disclosures

In this part, Table II provides the descriptive statistics of quantity of environmental disclosure using word count for national corporations in the three countries for the year 2008, 2009 and 2010. The amount of environmental disclosures has increased significantly from 112 in 2008 to 536 words in 2010. Moreover, it is apparent from this table that mean of environmental disclosure using word count increased from 129 in 2008 to 276 in 2010 which gives an overview the environmental disclosure increased during the study period.

<table>
<thead>
<tr>
<th>Year</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>112</td>
<td>445</td>
<td>129</td>
<td>187.54</td>
</tr>
<tr>
<td>2009</td>
<td>171</td>
<td>506</td>
<td>235</td>
<td>177.83</td>
</tr>
<tr>
<td>2010</td>
<td>183</td>
<td>536</td>
<td>276</td>
<td>182.96</td>
</tr>
</tbody>
</table>

In other hand, in order to obtain the differences in disclosure between countries, there is another important point when examining the disclosure is the amount of disclosure in

1 The war of liberation in Libya Started with the beginning of the uprising 17 February until 23/10/2011.
annual reports of organisations for each country. The following Table III summarizes the information on quantity of disclosure using a word count for oil and gas corporations in each surveyed country.

It can be concluded that all surveyed companies in the three countries presented environmental disclosure information in their annual reports. Disclosure varies from year to year and from one country to another. Generally, Egyptian firms have the highest amount of disclosure in annual reports amounted to 445, 506 and 536 words in years 2008, 2009 and 2010 respectively. In contrast, the lowest amount of words in the annual reports is 112 for Tunisian firms in 2008. With respect Libyan companies, it can be noted that environmental disclosure has increased steadily from 129 words in 2008 to 276 words in 2010. Findings of Libyan companies are compatible with Nasr’s studies (2004, 2011) who concluded that Libyan firms did not present any information related to environment in their annual report in 2004 whereas the result of study conducted in 2011 indicted that environmental disclosure had been improved. In addition, reference [38] reported that environmental information in Libya steadily increased on average throughout the period of study between 2002 and 2009. As for the Tunisian companies, the level of disclosure is similar to the level of disclosure in the study of [39] which showed that the highest level of disclosure in the 31 Tunisian companies is to 23. On the question of average of quantity for each firm, this study concluded that the highest average is for Egyptian firms over the three years 2008, 2009 and 2010 by 111.25, 126.5 and 134 words respectively. In contrast, corporations in Libya recorded the low amount of environmental information contained annual reports.

C. The Quality of Corporate Environmental Disclosures

Table IV shows that the quality of disclosure has increased over the three years of study in regard to national oil and gas firms. The average is 50.33 in 2008 and it increased in 2010 to 72.

Table V summarises a quality of environmental disclosure using environmental disclosure index for national corporations in Egypt, Libya and Tunisia. Measuring the quality of disclosure for each country in this study relied on the following: If the disclosure in the annual report disclosure is monetary, item scored as 3, but if the disclosure is quantitative, the score of disclosure to be 2. Finally, the score is 1 in case disclosure of information is qualitative. The final score for each country is a collection of scores of all companies surveyed from that country. From Table V, the highest score is 88 for Egyptian firms in 2010 whereas the lowest score is 32 for Tunisian companies in 2008. Overall, total aggregate of the quality of environmental disclosure in each of the three countries rose through the study period. In Egypt, it has increased from 77 in 2008 to 88 in 2010. In Libya, companies have recorded the highest increase over the three years where it increased from 42 in 2008 to 75 in 2010.

Previous research that addressed the environmental disclosure sought to examine many of the items, however, this study relied on previous studies in determining the items of disclosure which would give a broader dimension of environmental disclosure in companies, in particularly environmentally sensitive companies include companies operating in the petroleum industry. Previous studies have shown that items such as environmental policy, environmental management and environmental spending are one of the more disclosure items in annual reports. Table VI illustrates the disclosure for each item of disclosure items. It can be noted that most companies gave to the greatest importance to Education and Training item where it scored the highest disclosure over the three years followed by environmental management and risk management. On the other hand, the items of Litigation about environment were concerned with extraction from the petroleum and related emissions.
environmental awards did not disclose in the annual reports for all companies covered in this study. This study corresponds with [22] who concluded that items of environmental cost accounting has not disclosed by the sampled companies.

<table>
<thead>
<tr>
<th>Items</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>percentage of 2008</th>
<th>percentage of 2009</th>
<th>percentage of 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and Training</td>
<td>345</td>
<td>362</td>
<td>365</td>
<td>50.29</td>
<td>39.69</td>
<td>37.06</td>
</tr>
<tr>
<td>Environmental management</td>
<td>121</td>
<td>162</td>
<td>188</td>
<td>17.64</td>
<td>17.76</td>
<td>19.09</td>
</tr>
<tr>
<td>Risk management</td>
<td>65</td>
<td>70</td>
<td>82</td>
<td>9.48</td>
<td>7.68</td>
<td>8.32</td>
</tr>
<tr>
<td>environmental accidents</td>
<td>10</td>
<td>25</td>
<td>30</td>
<td>1.46</td>
<td>2.74</td>
<td>3.05</td>
</tr>
<tr>
<td>Wastes</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Environmental Policy</td>
<td>62</td>
<td>75</td>
<td>80</td>
<td>9.04</td>
<td>8.22</td>
<td>8.12</td>
</tr>
<tr>
<td>Litigation about Environmental Issues</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Land Rehabilitation and Remediation</td>
<td>47</td>
<td>52</td>
<td>69</td>
<td>6.85</td>
<td>5.70</td>
<td>7.01</td>
</tr>
<tr>
<td>sustainable development reporting</td>
<td>0</td>
<td>44</td>
<td>64</td>
<td>0</td>
<td>4.82</td>
<td>6.50</td>
</tr>
<tr>
<td>Air Emission</td>
<td>36</td>
<td>68</td>
<td>77</td>
<td>5.25</td>
<td>7.46</td>
<td>7.82</td>
</tr>
<tr>
<td>Spill</td>
<td>0</td>
<td>32</td>
<td>30</td>
<td>0</td>
<td>3.51</td>
<td>3.05</td>
</tr>
<tr>
<td>Environmental Auditing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Water Effluent</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Environmental Spending and Activities</td>
<td>0</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>2.51</td>
<td>0</td>
</tr>
<tr>
<td>Awards</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Environmental Cost Accounting</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>686</td>
<td>912</td>
<td>985</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Table VI displayed the important items disclose in annual reports of oil and gas corporations. It is worth noting that most of firms have paid attention to some of the items without the other. From the Table VI, it can be seen that the Education and Training, Environmental management had disclosed in the annual reports of companies more than other items over three years. Regarding 2010, education and training reported in 365 words in annual reports of companies included in the study sample followed both Environmental management and risk management which worth 188 and 82 words respectively. In 2009 and 2008, the largest amount of disclosed words are Education and Training, Environmental management had disclosed words are Education and Training, Environmental management and Risk management which reported 362, 162 and 70 respectively in 2009 whereas they reported 345, 121, and 65 words in 2008.

VI. DISCUSSION AND CONCLUSION

First and foremost, in each year of the study, the findings indicated that the national companies have paid attention to environmental information in annual reports, despite the decline in the quantity and quality of environmental disclosure. However, over the period studied, environmental disclosure has increased in national oil and gas companies providing environmental information in their annual reports. Initially, quantity of environmental disclosure was below 43 words on average in 2008, but it rose to above 134 words on average in the last year of the study. Environmental disclosures by listed Egyptian firms appear to be more common than in other firms in Libya and Tunisia. Likewise, quality of environmental disclosure has increased in surveyed firms in three countries, but the increase for Egyptian companies is more than in Libyan and Tunisian companies. In view of the results, quality of environmental disclosure in Egypt is 19.25 on average, while it is 14 and 16 on average for Libyan and Tunisian firms respectively in 2008. This value increased for all companies in three counties in 2010. In summary, with attention to environmental disclosure in oil and gas firms in Egypt, Libya, Tunisia, it is still low compared with other companies operating in the same region. Reference [48] concluded that the environmental disclosure in the oil companies in the United Arab Emirates and Saudi Arabia is higher than the rest of the companies in the member countries of the Organization of Arab Petroleum Exporting Countries.

Although the quantity of environmental disclosure increased slightly in oil and gas companies in Egypt, Libya and Tunisia, the environmental information contained in their annual reports is still more descriptive than quantitative. This finding appears to mirror findings in other developing countries. Reference [49] concluded that the majority of Malaysian companies provided general qualitative disclosures, while few companies provide quantitative information. Reference [50] indicated that most disclosure was seen to be qualitative rather than quantitative in the companies surveyed.

In conclusion, this study aimed to provide an overview of variations in the environmental disclosure practices between national oil and gas corporations operating in three countries located in North Africa which witnessed changes in regimes. To derive a final score, analysis of environmental disclosure practices across these countries was undertaken at three different levels. Firstly, In spite of a general increase in environmental disclosures by oil and gas corporations during the period 2008 to 2010, the difference in terms of the quantity and the quality of environmental disclosure were noted provided by national oil and gas companies in each country. Secondly, themes disclosure in national companies focused on the descriptive disclosure. Finally, the analysis shows that the extent of the environmental disclosure...
practices varies between companies according to the country of origin. Therefore, it is interesting to point out that there was a significant gap in the level of environmental disclosure across sample companies.

REFERENCES


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