The Accounting Treatment of Exploration Expenses for Petroleum Wells in Accordance with the Financial Accounting System and International Financial Reporting Standards: A Field Study on ENTP Company

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Abstract:
This study aims to demonstrate the accounting treatment of exploration expenses in accordance with the Financial Accounting System and the requirements of International Financial Reporting Standard (IFRS) 6. The objective is to develop accounting mechanisms that facilitate the application of international standards in this highly significant economic sector in Algeria. To achieve this goal, a field study was conducted on the National Well Company (ENTP). The study concluded that the successful efforts method serves as an important indicator for evaluating the performance of employees in the research and exploration department.

Keywords: Exploration expenses, petroleum wells, Financial Accounting System, International Financial Reporting Standards.

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Introduction:

Most countries around the world strive to implement a set of international standards known today as the International Financial Reporting Standards (IFRS). These standards include specific guidelines for various economic sectors, including the oil and gas sector, which holds significant importance in many nations as it constitutes a substantial share of their national income. This is especially relevant for Algeria, a major exporter of oil and gas. As a result, Algerian oil and gas companies have found it necessary to adopt these standards, particularly IFRS 6. However, adopting these standards requires the establishment of an accounting environment that aligns with the sector's unique nature, particularly through the development of Algeria's financial and accounting systems to ensure their compliance with IFRS 6. This compliance is critical for properly

implementing the standard and enhancing the reliability of financial statements in this sector. It enables the provision of high-quality information with qualitative characteristics that meet users' needs for decision-making.

Based on the above, we can pose the following main research question: **How are exploration expenses for petroleum wells accounted for under the Financial Accounting System and the requirements of International Financial Reporting Standards (IFRS)?**

To answer this central question, we must address the following sub-questions:

- How has the Financial Accounting System contributed to the treatment of exploration expenses for petroleum wells under the requirements of IFRS 6?
- What are the main approaches to accounting for exploration expenses for petroleum wells under IFRS 6?
- Can the Financial Accounting System be adapted to handle exploration expenses for petroleum wells in light of IFRS 6 updates?

Study Hypotheses:

To address the research problem and sub-questions, the following hypotheses were formulated:

- The Financial Accounting System adapts to IFRS 6 for the treatment of exploration expenses related to physiological assets.
- The Financial Accounting System (SCF) provides an appropriate mechanism for companies in this sector to disclose correctly and supply high-quality information to decision-makers within these entities.

Significance of the Study:

This research is of great importance in assessing the Financial Accounting System in accordance with international standards, particularly IFRS 6, which deals with the exploration and evaluation of mineral resources. The study provides numerous solutions to financial reporting issues related to the research and exploration phase of physiological assets.

Study Objectives:

The study aims to address the following points:

- Evaluate the mechanisms of the Financial Accounting System in measuring and accounting for exploration expenses, as outlined by IFRS 6.
- Propose a new accounting system to develop mechanisms aligned with the requirements of IFRS 6.

Previous Studies:

1. **Study by Shaker Abdul Karim Al-Baldawi and Hassanain Saad Khalaf "Evaluating Financial Reporting for the Exploration Phase Under the Unified Accounting System Based on IFRS 6,"** Al-Mustansiriya University, Al-Kut College Journal, Vol. 2, Issue 2, 2018:
   This study aimed to evaluate the mechanisms of the unified accounting system for measuring and presenting exploration phase expenses in the oil and gas industry. It proposed a mechanism to develop the unified accounting system through accounting approaches aligned with IFRS 6 and highlighted their impact on financial statements.
   The study found deficiencies in the unified accounting system, including the lack of a proper mechanism to track exploration costs at the field level and the limitation of simply capitalizing these expenses. Additionally, there were inconsistencies in classifying accounts resulting from economic events with exploration companies. For instance, revenues paid by these companies were recorded under "current activity revenues," while receivables owed to the company were listed as "non-current activity debtors."

Structure of the Study:

The study is divided into the following sections:

1. **Physiological Assets under Accounting Practices**
2. **The Oil Industry**
3. **Field Study**

1. Physiological Assets under Accounting Practices

1.1. International Standard (IFRS 6)

1.1.1. Origin, Impacts, and Necessity

Historically, two primary methods have been used in the oil and gas industry: the Successful Efforts Method and the Full Cost Method. The first method allows capitalization of all costs associated with successful exploration projects that result in discovering new reserves of oil and natural gas. Conversely, unsuccessful projects or dry holes are treated as operational expenses and charged against the current period's revenues, aligning with the matching principle (Umobong & Asian, 2015, p. 02). On the other hand, the second method permits the capitalization of all costs incurred in the pursuit of discovering oil and gas reserves, deferring these costs to future periods to be matched against revenues derived from the production of discovered reserves (Schugart & Umobong, 2015; Gary, 2002, p. 05). In other words, all costs from both successful and unsuccessful projects are capitalized and reported on the balance sheet.

These methods have been a subject of debate for over 40 years, particularly after the 1973 Middle East oil embargo. This event heightened interest and support for the oil and gas industry, leading to the development of industry-specific accounting standards. The Securities and Exchange

Commission (SEC) played a critical role in supporting this development by fostering specialized accounting standards. It delegated the responsibility for drafting these standards to the Financial Accounting Standards Board (FASB) while retaining the authority for final approval.

Subsequently, the FASB issued a draft titled *"Financial Accounting and Reporting by Oil and Gas Producing Companies,"* aiming to narrow accounting alternatives and exclusively require the use of the Successful Efforts Method. However, this proposal faced strong opposition and pressure from smaller, independent companies in the industry that relied on the Full Cost Method to reflect asset growth and attract investment for exploration activities.

Despite this resistance, the FASB conducted extensive studies supporting the proposal, culminating in December 1997 with the issuance of Standard No. 19 titled *"Financial Accounting and Reporting in the Oil and Gas Industry."* This effectively eliminated the Full Cost Method from financial reporting. However, due to continued lobbying and pressure, the SEC eventually withdrew its support for Standard No. 19, allowing companies to continue using either the Full Cost Method or the Successful Efforts Method (Cortese & Irvine, 2010, pp. 87–95).

It can be stated that the intense pressure and opposition to the implementation of the standard resulted from the economic impacts of the Successful Efforts Method on oil companies, particularly smaller ones. The exploration phase is fraught with significant risks, including uncertainty, lengthy timeframes, and high expenditures. These factors make securing financial resources essential for the continuity of these companies. To obtain such funds, balance sheets and income statements undergo financial analysis by creditors and lenders. The Full Cost Method aids in presenting the economic unit's assets as growing, thereby enhancing its financial position and reflecting higher profits.

According to Elanfour and Abushaiba, preferring the Full Cost Method helps retain existing investors by reporting financial statements that present a more optimistic view of income and financial position (Abushaiba & Elanfour, 2014, pp. 2340–4044). Conversely, under the Successful Efforts Method, smaller units may face bankruptcy if they persist in unsuccessful projects over a short period, due to the potential loss of investors. This aligns with the pressures observed during that period. It becomes evident that using the Full Cost Method helps mitigate the erosion of an economic unit’s capital.

On a national level, the economic impact manifests in the taxable amount, which tends to be higher if the Full Cost Method is applied, unlike the Successful Efforts Method. This taxation dynamic often influences state policies, particularly in capitalist countries, to lean toward the Full Cost Method.

The International Accounting Standards Board (IASB) is a non-governmental organization that lacks political accountability (Gallhofer & Haslam, 2007, p. 633). It relies on funding to sustain its operations, often provided by large organizations, institutes, councils, and economic entities with significant global influence and vested interests. These funding entities may sometimes exert pressure on the board.

From a social perspective, the effects are evident in the form of high tax revenues that bolster national budgets, enabling governments to meet essential societal needs.

In 1998, the International Accounting Standards Committee (IASC) added the Extractive Industries Project to its agenda. The project aimed to address measurement and disclosure issues faced by the oil and gas industry. Among the many issues considered were the methods used to account for pre-production costs, specifically the costs associated with activities like exploring and evaluating the feasibility of oil reserves (Cortese, Irvine, & Kaidonis, 2010, pp. 76–88).

In 2000, the IASC issued a discussion paper containing a detailed study on accounting in extractive industries. This paper favored adopting an accounting approach more aligned with the principles of the Successful Efforts Method. It also included a survey on prevailing practices to help the IASC identify key issues in accounting for extractive industries (Al-Qadi & Al-Rishani, 2010, p. 63). In 2004, the IASB introduced a draft standard, IFRS 6, titled *"Exploration for and Evaluation of Mineral Resources."* This draft aimed to enhance accounting practices for exploration and evaluation activities. However, it was positioned as a temporary measure rather than a comprehensive accounting standard for the extractive industry, which was expected to be developed later.

The purpose of IFRS 6 was to enable economic entities to report exploration and evaluation assets in compliance with the standard. It became effective at the beginning of 2005 (Kaidonis, Irvine, & Cortese, 2009, pp. 27–37).

This standard emerged in response to international needs, as expressed by Wing and Cai, for a set of globally accepted accounting standards. Such standards reduce the need for preparing financial statements in different formats, minimize accounting diversity between countries, facilitate capital movement, and support global market integration. Reflecting these needs on the oil sector, companies in this industry are large entities operating across various regions of the world. Hence, the presence of a unified international standard is a critical accounting, legal, and economic necessity for these companies (Cai & Wang, 2010, p. 25). Below is a summary of the objectives, scope, and requirements of IFRS 6.

2.1.1. Recognition and Measurement Requirements Under IFRS 6

The recognition and measurement requirements under IFRS 6 can be summarized as follows:

I. **Accounting Policy for Costs:**
The standard requires entities to define an accounting policy for exploration and evaluation expenditures and to apply it consistently. This policy should consider the extent of expenditure incurred for exploring mineral resources and recognize these assets at cost. Examples of expenditures eligible for inclusion in the initial cost include (Ernst & Young, 2009, p. 01):

- Costs of acquiring exploration rights;
- Costs of topographical, geological, geochemical, and geophysical studies;

- Exploratory drilling costs;
- Sampling costs;
- Technical and commercial feasibility costs for resource extraction.

The researchers believe that the above types of expenditures cannot be adequately addressed by a financial accounting system alone. Instead, a robust **costing system** is required to provide detailed cost information for activities like topographical, geological, geochemical, and geophysical studies, sampling, and others.

II. **Flexibility in Recognition:**
IFRS 6 does not specify strict requirements for recognizing exploration and evaluation costs as assets. Instead, it allows entities to develop policies tailored to their needs. This approach is guided by paragraph 10 of IAS 8, which states that in the absence of a specific standard or interpretation for a particular accounting issue, management must adopt a policy that provides relevant and reliable information (Abu Nassar & Hamidat, 2016, p. 712).

III. **Exemption from IAS 8 Requirements:**
The standard exempts entities from applying paragraphs 11 and 12 of IAS 8, which require management to adopt accounting policies similar to existing standards or follow national standards of other countries, provided those frameworks are conceptually similar to the IFRS framework in terms of recognition and measurement (Khudair, 2016, pp. 37–38).

2. The Oil Industry

To study International Financial Reporting Standard (IFRS) 6, it is essential to first provide a brief overview of the concept and stages of the oil industry.

2.1. Concept:

Oil represents the most critical source of energy globally, supplying approximately 35% of the world's primary energy consumption (Inomiesa & Oghenemarho, 2015, p. 19). Today, oil lies at the heart of the modern industrial economy (Edward Morse, 2017, p. 8). It shapes the economic landscapes of many producing nations by supporting state budgets, particularly in developing countries with rent-based economies. Moreover, it serves as a tactical leverage tool for producing nations across various domains.

The industry focused on extracting and producing this strategic resource is referred to as the oil industry, defined as "a set of activities or production processes characterized by technical, technological, and administrative organizational operations related to the exploitation of petroleum or oil resources" (Rahman & Tawahir, 2013, p. 19). The oil industry is recognized as one of the most monopolized industries globally (Alalade & Oluwadunsin, 2016, p. 16).

2.2. Stages of the Oil Industry:

The oil industry undergoes several interdependent stages, culminating in the marketing of petroleum products. The following figure illustrates the stages of oil extraction:

Figure 01: Stages of Oil Extraction

Source: Al-Rawi, 2016, p. 44.

2.2.1. The Exploration Phase

The exploration phase represents the foundational stage of the oil industry, aimed at discovering oil and gas. Over time, exploration methods have evolved, starting from identifying oil locations through surface seepage to studying various subsurface layers at depths of tens of kilometers to locate oil reservoirs. The human element plays a pivotal role in this phase. According to Taylor, this element is categorized into three groups: geologists, responsible for understanding rocks; geophysicists, tasked with interpreting the Earth's subsurface structure; and geochemists, who analyze the fluids beneath the Earth's surface. Taylor also notes that any errors during this phase can lead to significant costs, including financial, environmental, and human safety impacts.

Building on the above, it can be said that the oil industry is a complex sector with characteristics distinct from other industries, notably the inherent risks and uncertainties of the exploration phase. This phase demands considerable time, effort, and substantial financial investment, which must be incurred before confirming the presence or absence of oil. This financial aspect often becomes a point of contention and discussion among regulatory bodies overseeing projects in this stage. After reviewing the concept and stages of this critical industry, the necessity emerges to examine financial reporting for the exploration phase under international standards, as follows:

2.2.2. Financial Reporting for the Exploration Phase in the Oil and Gas Industry

Financial reporting in the oil and gas industry is inherently complex due to the technical characteristics of the sector and the transactions and events that significantly impact the accounting profession. Reporting these events accurately and appropriately has been the subject of prolonged accounting debates and conflicts, particularly regarding the exploration phase, spanning over half a century.

Issuing a globally agreed-upon final standard for this phase has proven nearly impossible due to the economic, political, and social implications of such a standard on the international stage. The culmination of previous attempts is the interim IFRS 6, which, according to the researchers, contradicts the core purpose of the International Accounting Standards Board (IASB)—the body responsible for drafting and developing international financial reporting standards.

The IASB's primary objective is to serve the public interest by developing high-quality standards that are comprehensible, enforceable, and based on clearly defined principles. These standards aim to provide relevant information to investors and other market participants. Consequently, the objectives of international financial reporting standards include enhancing the quality of financial reports and improving comparability across countries. This perspective aligns with the European Parliament Regulation (1606/2002), which states that adopting international financial reporting standards is intended to achieve a high degree of transparency and comparability, thereby improving capital market efficiency (George, Li, Xi, & Shivakumar, 2016, pp. 898–1004).

In the following sections, we will elaborate on the reasons for the contradiction after explaining the provisions of IFRS 6.

3. Case Study: National Well Company (ENTP)

This section aims to highlight the accounting practices for exploration expenses adopted by the National Well Company (ENTP) based on the Financial Accounting System and compare them with the requirements of **IFRS 6**.

3.1. Overview of ENTP

The National Well Company (ENTP) is a subsidiary of Sonatrach, established by Executive Decree 18/171 on August 1, 1981. It became operational on January 1, 1983, following the restructuring of its parent company, Sonatrach, and the issuance of the National Enterprise Reform Act. Later, ENTP was converted into a joint-stock company (**EPE.SPA**), with shareholders including Sonatrach and the Public Holding Company for Construction and Building Materials. In July 2001, its shareholder structure was revised to include **SPG**, the General Petroleum Company. The company operates with a capital of **2,400,000,000 DZD**.

3.2. ENTP Activities

The ENTP's activities are divided into two main categories:

1. **Core Activities:**
   - Drilling wells;
   - Well maintenance.
2. **Supplementary Activities:**
   - Transportation services;
   - Hospitality services.

Table 1: Distribution of Expenses by Nature Across Three Fields

Expense Categories	Field (Positive)	3 Field (Negative)	2 Field (Negative)	1 Total
Geological and Physiological Study Costs	84,938,200	32,825,200	28,153,000	23,960,000
Survey Costs (D2)	271,347,000	76,672,000	83,860,000	110,815,000
Survey Costs (D3)	604,990,000	233,610,000	167,720,000	203,660,000
Equipment Costs	277,620,000	86,256,000	75,474,000	65,890,000
Labor Costs	137,770,000	55,108,000	46,722,000	35,940,000
Miscellaneous Costs	49,118,000	21,564,000	15,574,000	11,980,000
Total	**1,375,783,200**	**506,035,200**	**417,503,000**	**452,245,000**

Unit: Algerian Dinar (DZD)

Source: *Prepared by the researcher based on information from the Accounting and Finance Department at ENTP.*

3.3. Accounting Treatment of Exploration Expenses Under IFRS 6

First Approach: Full Capitalization

Amount	Description	Account Number
Debit	Credit	Debit
1,375,783,200	1,375,783,200	**From:** Oil Inventory Account

Second Approach: Successful Efforts

Amount	Description	Account Number
Debit	Credit	Debit
506,035,200	869,748,000	**From:** Oil Inventory Account
	Exploration Expenses Account To: Bank Account	

4.3. Accounting Treatment of Exploration Expenses Under the Financial Accounting System

First Approach: Full Capitalization (Currently Practiced)

Amount	Description	Account Number
Debit	**Credit**	**Debit**
1,103,957,000	271,826,200	1,375,783,200
	Depreciation Account To: Bank Account	

Second Approach: Successful Efforts (Proposed to Comply with IFRS 6)

Case 1: Positive Exploration

Amount	Description	Account Number
Debit	**Credit**	**Debit**
506,035,200		506,035,200
	To: Bank Account	

Case 2: Negative Exploration

Amount	Description	Account Number
Debit	**Credit**	**Debit**
707,419,000	162,329,000	52,113,000
82,662,000		707,419,000
27,554,000	Miscellaneous Expenses Account	**To:** Depreciation Account
		To: Bank Account

4. Conclusion

Through our study on the accounting treatment of exploration expenses in accordance with IFRS 6, and as an attempt to shed light on the accounting practices under the Financial Accounting System, we reached the following findings and recommendations:

4.1. Hypothesis Testing

I. **First Hypothesis:**

a. The hypothesis stating that the Financial Accounting System adapts to IFRS 6 for treating exploration expenses related to physiological assets is not validated, as Algeria has not adopted international financial reporting standards.

II. **Second Hypothesis:**

- The hypothesis that the Financial Accounting System (SCF) provides an appropriate mechanism enabling companies in this sector to disclose correctly and supply reliable information to decision-makers was also rejected.

4.2. Results

I. **Differences in Financial Statement Presentation:**

a. There are discrepancies in financial statement presentation due to the multiple alternatives offered by IFRS 6.

II. **The Successful Efforts Method as a Performance Indicator:**

a. The Successful Efforts Method is an essential metric for evaluating the performance of employees in the research and exploration department.

III. **Negative Aspect of Full Capitalization:**

a. One major drawback of the Full Capitalization Method is the creation of artificial profits and losses resulting from the amortization of these expenses over several years.

IV. **Foreign Exploration Companies in Algeria:**

a. Foreign exploration companies operating in Algeria are legally required to prepare their financial statements according to the Financial Accounting System (**SCF**). Consequently, these companies must account for exploration expenses using the Full Capitalization Method, leading to potential inconsistencies in measurement and disclosure across consolidated financial statements.

V. **Creative Accounting Practices and Tax Implications:**

- The multiple measurement alternatives provided by IFRS 6 enable accounting practitioners to engage in creative accounting through the Full Capitalization Method, thereby achieving tax savings. This negatively impacts the state treasury.

Recommendations

The findings emphasize the need for Algeria to reconsider its accounting frameworks and align with international standards to enhance transparency, comparability, and reliability in financial

reporting. This alignment is particularly crucial for the oil and gas sector, given its strategic economic significance.

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