ENVIRONMENTAL ACCOUNTING EXPERIENCE OF SOME COUNTRIES IN THE WORLD AND LESSONS FOR VIETNAM

Ly Thi Thu Hien*

Abstract: ***Environmental protection and sustainable development have become top priorities for many countries. This study provides insights into the environmental accounting methods successfully implemented in various nations, drawing valuable lessons for Vietnam. The paper analyzes several exemplary countries' experiences in environmental accounting, including developed nations such as Kazakhstan, Sri Lanka, and the Czech Republic. Each of these countries has its own unique environmental accounting methods and processes, reflecting differences in economic, social, and political conditions. This offers profound insights into environmental accounting and opens new avenues for Vietnam to adopt effective accounting methods to promote sustainable development and environmental protection.***

• Keywords: *environmental accounting, environmental accounting experiences, environmental costs.*

Date of receipt: 20th Mar., 2025
Date of delivery revision: 26th Mar., 2025
Date of receipt revision: 10th Apr., 2025
Date of approval: 20th May, 2025
DOI: https://doi.org/10.71374/jfar.v25.i3.09

1. Introduction

In the context of globalization and the increasing awareness of the importance of environmental protection, environmental accounting has emerged as a significant field of research, attracting the attention of numerous scientists, managers, and governments worldwide. Therefore, conducting a survey and analysing the environmental accounting methods that have been successfully implemented in several countries is crucial for drawing valuable lessons for Vietnam in developing and applying an environmental accounting system that aligns with the country's practical conditions.

This study begins by examining environmental accounting, a field related to the recording, analysing, and reporting financial information concerning activities that impact the environment in countries such as Kazakhstan, Sri Lanka, and the Czech Republic. Environmental accounting aims to assess the impact of business activities on the environment and assist organizations and enterprises in developing sustainable strategies, optimizing resource use, and minimizing costs.

In the current context, where environmental issues such as climate change, pollution, and natural resource exploitation are becoming increasingly severe, environmental accounting is more urgent than ever. This study will focus on analyzing exemplary countries' experiences in environmental accounting, such as Kazakhstan, Sri Lanka, and the Czech Republic. These countries have made significant progress in integrating environmental factors into their accounting systems, thereby providing profound insights into environmental accounting and opening new pathways for Vietnam to adopt effective accounting methods to promote sustainable development and environmental protection.

2. Experiences in Environmental Accounting from Some Countries Worldwide

2.1. Environmental Accounting Experiences of Kazakhstan

To effectively manage environmental risks, businesses in the Republic of Kazakhstan must continuously improve their environmental management approaches and allocate the necessary resources for environmental protection, particularly in terms of environmental costs, which include paying taxes on emissions as mandated and costs associated with environmental measures. According to the accounting regulations in the Republic of Kazakhstan, environmental costs refer to the total costs incurred by a business entity for: - preventing ecosystem disruption through environmental measures; - mitigating the impacts of ecosystem disruption on the population, fixed assets (funds) of the industry, infrastructure of residential areas, and public utilities, among others. Additionally, as noted, environmental costs are often understood as the costs associated with maintaining environmental quality through environmental measures. The following types of costs should be considered as environmental costs: - those related to preventing the negative impacts of technological processes of companies and organizations on environmental components; - implementing a "green policy" in the production process; - making changes to the production process related to the processing of secondary natural resources to reduce negative impacts on the overall environmental complex.

** Lac Hong University; email: hienly@lhu.edu.vn*

The types and characteristics of a company's operations can serve as criteria for classifying environmental costs. The classification criteria for environmental costs are the types and fields of environmental activities of companies and organizations. The collection of these operational indicators is typically divided into the following protective categories: - activities aimed at protecting and rationally utilizing the air basin; - activities aimed at protecting and rationally utilizing water resources; - activities related to the protection and rational utilization of land resources; - activities protecting physical areas; - activities protecting near-Earth space. Therefore, the most detailed classification of costs according to the environmental protection object tends to be divided into the protection of: 1. Water (integrated water basins) 2. Land (physical areas) 3. Atmospheric air (near-Earth space). Based on the classification above, costs can be further divided into two types: The first type will include current costs related to maintaining environmental protection facilities. The second type comprises capital costs to create environmental complexes through environmental investments.

The environmental accounting objectives for a company is identified by calculating the costs of environmental measures. Accordingly, the accounting items include:

- The protective objects themselves (integrated water reservoirs, physical areas, atmospheric air, and near-Earth space);

- Fixed assets designated for environmental protection, operational costs, and results of environmental activities, including items for the aforementioned protective objects.

The accuracy of measuring operational costs for environmental protection, which constitutes a part of the enterprise's resources used in the operation of environmental facilities, depends on the reliability of reflecting their components. Therefore, the components of operational environmental costs include:

1. Maintenance, repair, and upkeep costs of fixed assets designated for environmental protection;

2. Costs related to implementing environmental protection measures aimed at enhancing the quality characteristics of environmental components, arising from the core business activities of the company and other financial sources;

3. Additional costs related to the operation of fixed assets designated for environmental protection, predetermined by changes in production technology to reduce the level of negative impact on the environment. The capital cost group includes production operational costs in the construction sector and technology preparation, procurement of inventory and equipment, construction, installation, exploration, and research and development projects.

2.2. Environmental Accounting Experiences of Sri Lanka

In Sri Lanka, environmental accounting is divided into the following components:

Energy Accounting

Generally, regardless of size, most businesses in Sri Lanka are concerned with energy management and related accounting activities. Similar to what Wilmshurst and Frost (2001) identified in Australia, many initiatives have been developed concerning efficient energy use. Consequently, energy accounting is a primary environmental accounting tool Sri Lankan businesses utilise. They record the types of energy consumed, analyze energy consumption during different periods (e.g., peak and off-peak hours), calculate energy intensity ratios (such as energy consumption per standardized unit/minute), and assess the feasibility of new energy-saving measures. In Sri Lanka, high energy costs are a driving factor behind the increasing concern for energy conservation. Therefore, energy accounting in Sri Lankan businesses is primarily motivated by internal efficiency. This means that the primary ecological efficiency driver propels energy accounting measures in Sri Lankan enterprises.

Material Accounting

In addition to energy accounting, another essential environmental accounting measure adopted by Sri Lankan businesses is material accounting, particularly in the manufacturing sector. Depending on the specific industry, the contribution of material accounting to material management will vary.

Although organizations generate information through material accounting, this information is not utilized to apply advanced techniques such as Material Flow Cost Accounting (MFCA). As a result, most waste and waste treatment costs are considered general costs without linking them to the products that generate them. This can lead to these costs being allocated to actual products that do not generate them. Consequently, cleaner products effectively subsidize other less clean products. This is where Sri Lankan businesses could employ Activity-Based Costing (ABC) methods to track general costs for specific activities (and products) that generate them.

Water Accounting

Although water costs are relatively low in Sri Lanka, businesses have begun to pay more attention to water management and related accounting. Many Sri Lankan enterprises focus on two primary approaches to water management: a) behavioral and b) technical. Behavioral approaches primarily involve educating stakeholders

(such as employees, customers, suppliers, etc.) to bring about changes in water usage. Technical approaches involve changes in physical capital aimed at water conservation. This can range from water-saving faucets to wastewater treatment plants.

Another aspect of environmental accounting related to water is wastewater treatment and accounting. Many organizations have implemented in-house wastewater treatment plants or facilities to manage wastewater (and waste materials). In terms of water accounting, tracking total water consumption and wastewater generation, evaluating water-saving projects, and calculating water intensity ratios are common practices representing environmental accounting practices. Due to the lack of potential cost savings, wastewater treatment is primarily driven by stakeholder pressures, such as from consumers (in the hospitality sector, these are environmentally conscious guests) and regulatory agencies.

Carbon Accounting

Although less common, another emerging practice is carbon management and carbon emissions accounting, which is increasingly prevalent in the hospitality and apparel sectors. Due to the absence of any legal pressures and the inability to realize cost savings, carbon emissions management is primarily driven by pressures from international stakeholders, particularly customers. Sri Lankan businesses rely on external expert organizations to manage and calculate carbon emissions. This is due to the technical issues associated with accounting for carbon emissions. These consulting firms provide Carbon Neutrality Certificates or other certifications, such as Carbon Conscious Certificates, for clients who comply with the requirements. These companies often purchase carbon offsets from carbon markets to achieve carbon neutrality.

Life Cycle Accounting

The application of life cycle accounting considerations in energy and water consumption and material use is particularly evident in the design phase of buildings and facilities among Sri Lankan organizations. Some observed Sri Lankan businesses have attempted to optimize solar energy use, minimize electricity consumption, utilize environmentally friendly air conditioning systems such as evaporative cooling systems, reduce damage to vegetation and the environment, and install water and waste management systems from the design stage. However, these Sri Lankan businesses do not employ life cycle environmental impact assessments. Although many companies identify the environmental impacts of their organizational activities at the design or implementation stage, there is no systematic observation of identifying them throughout the entire value chain and across the organization's operations.

2.3. Environmental Accounting Experiences of Czech Republic

In recent years, various approaches to environmental accounting have gradually developed in the Czech Republic. Environmental accounting in this country exhibits the following specific characteristics:

(i) The philosophy and tools used within the environmental accounting framework can significantly contribute to societal development, designated as sustainable development. The system allows for assessing approaches to the environment and environmental performance while facilitating communication in environmental protection between managers and other stakeholders.

(ii) Environmental accounting at the corporate level typically aims to achieve the following objectives:

- Identify opportunities for improving the company's environmental performance;

- Establish priorities for each activity and environmental measure;

- Consider environmental aspects within the decision-making framework related to the company's current outputs (products and services), as well as in the research and development of new products and services;

- Ensure transparency of the company's activities related to the environment;

- Identify the information needs of key stakeholders, collect the required information, and allow users access to this information (i.e., ensure the process of environmental communication);

- Establish an environmental management system and environmental protection standards within the company (at lower organizational levels). Management requires various types of information to achieve the aforementioned objectives, for example: • Information on material and energy flows and inventory, information related to each process and output of the company, and information on environmental aspects and their impacts on the environment; • Information on the economic impacts of the company's environmental protection measures, as well as information on the economic consequences of harming the environment; • Qualitative information regarding the requirements (needs) of different stakeholders arising from the company's impact on the environment.

(iii) The significance of environmental accounting lies in connecting the economic sphere with the company's approach to the environment. Its primary concern is to enhance management's awareness of the potential impacts of environmental aspects on the company's operations, products, and services concerning the company's economic efficiency (these impacts can be either positive or negative). The

company's environmental efficiency (often expressed in physical units) can significantly affect the company's economic efficiency (reflected in financial indicators). For example, the interrelationships can be described (recorded) by measuring ecological efficiency (Rankin et al., 2012).

In enterprises, information about environmental costs is largely unrelated to information about material and energy flows (e.g., data on resource extraction and waste production in a broad sense quantities and types of pollutant emissions into the air or the quantity and composition of wastewater). Companies in the Czech Republic view the Environmental Management System (EMS) as an important tool for minimizing the environmental impact of their activities and as a means of recognizing the impacts within the business sector.

The current situation regarding the implementation of environmental accounting in the Czech Republic continues to be characterized by the fact that monitoring environmental costs in enterprises is largely not understood as part of an integrated system for monitoring and evaluating material, energy, and monetary flows. For environmental accounting to provide relevant information to support decision-making processes within enterprises, particular attention must be paid to identifying the environmental costs incurred and the benefits that the enterprise gains through its environmentally friendly approach.

3. Lessons learned for Vietnam

Vietnam enacted its first Environmental Law in 1993 and amended the Environmental Protection Law in 2005. The government issued Decree No. 67/2011/ND-CP on August 8, 2011, regarding taxable entities, tax calculation bases, tax declaration, tax assessment, tax payment, and environmental protection tax refunds; the Ministry of Finance issued Circular No. 152/2011/TT-BTC on November 11, 2011, guiding the implementation of Decree 67/2011/ND-CP; and Circular No. 159/2012/TT-BTC on September 28, 2012, amended and supplemented Circular No. 152/2011/TT-BTC. However, the country has yet to establish an accounting regime related to the application of environmental accounting in enterprises. There are no provisions in the current accounting regime guiding enterprises on classifying and monitoring production costs, nor are there any mandatory accounts for recording environmental costs. Currently, there are not many government frameworks and regulations for companies and organizations to study and implement environmental accounting. The research and application of environmental accounting in Vietnam is still in its infancy, and the number of research projects on environmental accounting is not particularly high. Most enterprises have not arranged to quantify environmental costs and benefits with a full-time accountant and continue to maintain a conventional accounting framework without integrating the details. Several lessons can be drawn from examining the environmental accounting experiences of various countries worldwide:

First, improving the system of indicators for measuring environmental performance is essential. The environmental management reporting system will generate information on environmental costs for business managers. Managers must rely on a set of indicators to measure environmental performance and evaluate environmental cost information. Therefore, corporations need to practice intermediary improvements in developing ecosystems alongside policy researchers.

Second, it is necessary to study the experiences of countries worldwide, particularly developed nations, in applying environmental accounting, thereby drawing lessons for Vietnam to achieve the highest effectiveness in implementing environmental accounting for enterprises.

Third, businesses need to enhance their awareness of the value of environmental accounting, focusing on analyzing and implementing environmental accounting, and accepting it as part of the overall accounting framework. The strengths of the Fourth Industrial Revolution must be leveraged, applying advanced scientific and technological innovations in implementing environmental accounting to achieve high efficiency and international integration.

Fourth, greater emphasis must be placed on the use of environmental accounting within the organizations of state management agencies.

Guidelines for implementing environmental accounting and legal documents should help individuals, organizations, and enterprises research environmental accounting issues and encourage businesses to implement environmental accounting. The Ministry of Natural Resources and Environment needs to research, develop, and issue guidelines on environmental accounting, emphasizing that this is an important method for effectively managing the environmental activities of enterprises.

References:

Wilmshurst, T. D., & Frost, G. R. (2001). The role of accounting and the accountant in the environmental management system. Business strategy and the environment, 10(3), 135-147.

Rankin, M., Stanton, P., McGowan, S. C., Ferlauto, K., & Tilling, M. (2012). Contemporary issues in accounting.

Environmental Protection Law No. 29-L/CTN dated December 27, 1993, of the National Assembly.

Environmental Protection Law (Amended, 2005) No. 52/2005/QH11 dated November 29, 2005.

Decree No. 67/2011/ND-CP: Issued on August 8, 2011, regulating taxable entities, tax calculation bases, tax declaration, tax assessment, tax payment, and environmental protection tax refunds.

Circular No. 152/2011/TT-BTC: Issued on November 11, 2011, guiding the implementation of Decree No. 67/2011/ND-CP.

Circular No. 159/2012/TT-BTC: Issued on September 28, 2012, amending and supplementing Circular No. 152/2011/TT-BTC.