

# Diving Deeper: Unlocking Benefits by Leveraging the Hidden Value of Internal Auditors in Water Audit Practice

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Received: August 28, 2023

Accepted: September 26, 2023

Online Published: October 30, 2023

doi:10.5430/afr.v12n4p80

URL: <https://doi.org/10.5430/afr.v12n4p80>

## Abstract

The development of water audit practices in Malaysia is still in its early stages compared to other countries. The discussion on water audit has attracted the attention of research recently. Utilising 30 papers in water auditing literature, this study aims to highlight the roles of internal auditors in water audit practices. This paper identified two roles of internal auditors. This study also emphasises the benefits of involving an internal auditor in water audit practices, particularly for organisations. These benefits include enhancing cost efficiency by optimising water usage within the organisation, contributing to optimising water utilisation, and assisting organisations in improving decision-making regarding water management. This paper argued that the water audit is believed to be an alternative to cater to water management issues.

**Keywords:** water audit, internal auditor, role

## 1. Introduction

The world has suffered from a severe water problem recently, and numerous people have been affected by this catastrophe. The severity of this issue was underscored by the World Water Development Report 2020 published by the United Nations Water, which noted a growth in world water usage of around 1% each year. In addition, several factors, including climate change, have worsened the water situation (Zhang et al., 2022). Additionally, since the 1970s, Malaysia has experienced numerous water crises. Inadequate water management bears partial responsibility for the current water crisis. This is because society believes that there is an infinite amount of water on earth, which leads to excessive water pollution, unsustainable water subsidies, water waste, and an imbalance between supply and demand. Thus, managing water resources and supplies can be challenging due to these factors (Muhammad et al., 2021).

In anticipation of longer droughts that are expected due to climate change in Malaysia, the Water, Land, and Natural Resources Ministry of Malaysia, Dr Jayakumar, has commissioned the National Water Services Commission (SPAN) and the Water Supply Department to conduct a full audit in all states of the country. Furthermore, it is predicted that between 2025 and 2030, the water supply in Malaysia will decline by 20% to 25%. As a result, Dr Jayakumar has advocated a comprehensive overhaul of the water sector, which would upgrade water meters, reservoirs, tanks, and underground pipelines (Water industry to be audited, The Star, 2019).

Consequently, implementing water auditing would effectively control water consumption in residential and commercial properties (Kanwar et al., 2022; Lyu et al., 2023; Schilling-Vacaflor et al., 2021). A water audit is the process of analysing and measuring water usage within a specific project or system to find opportunities for improvement in water management and water efficiency. Considering water losses, it also serves as a valuable tool for figuring out how efficiently an irrigation project uses water. Moreover, the fundamental goal of water audits is to identify strategies for optimising water efficiency and mitigating water waste (Hazelton, 2014; Kanwar et al., 2022; Gu et al., 2023; Lyu et al., 2023). To date, water auditing application has some flaws and research gaps.

Therefore, this study will explore internal auditors' roles and benefits of their involvement in water auditing as they

are the ideal individuals to carry out a water audit. This study shed some light on the role of internal auditors in water management and its implications. It will help the organisation appreciate the role of internal auditors in this area and fully utilise them to get a competitive advantage. This study provides an alternative solution to solve water management issues.

## 2. Method

This paper employed the articles search from Science Direct, Emerald and Google Scholars using “water auditing”. There are no limits to data retrieval in the study of “water audit”. This study focused more on the paper, which is accessed and written in the English language medium. A total of 150 papers were downloaded. An in-depth content review narrowed down the list to 30 papers. The paper multiple times identifies the role of internal auditors in Social Audit, which will be the highlights of the discussions.

The researchers further classify the content analysis into the main discussion on the roles of internal auditors, such as internal auditors, and the implications of internal auditing practices in the water management contexts. The researchers further screen the discussion on the role of internal auditors into two types: consulting and assurance.

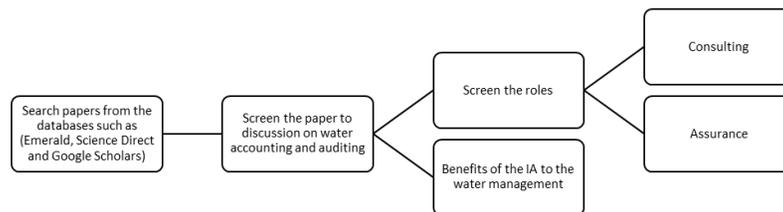


Figure 1. Analysis of Water Audit

## 3. Dimension of Discussion: Role of Internal Auditors in Water Audit

The discussion of the role of internal auditors stipulated the roles of auditors as consulting and assurance (Gu et al., 2023; Soh & Martinov-Bennie, 2015). Following this statement, all the papers have been categorised into consulting and assurance roles. Generally, this study found that the papers discussed the role of internal auditors as more on consulting rather than assurance activities. The papers focused more discussion on Australia (Egan, 2014), China (He et al., 2007; Xu et al., 2022), Brazil (Schilling-Vacaflor et al., 2021) and India (Shafqat, 2011). This issue has not been addressed in Southeast Asia (SEA), including Malaysia, Indonesia or Singapore, which will be one of the potential issues for further research.

The consulting roles describe how the internal auditors assist the organisation in advising on developing and implementing water management policies (Kanwar et al., 2022). In water auditing, internal auditors can assist organisations in developing and implementing effective water management policies and procedures (Lyu et al., 2023; Wu et al., 2020). Internal auditors have a unique advantage in conducting water audits since they can access the organisation's data. They also deeply understand the organisation's objectives, risks, and control of the environment. Thus, internal auditors are well-positioned to detect risks concerning water usage and efficiency within the organisation's operations, processes, and systems. They can assess the possible effects of those risks on the organisation and the efficiency of internal controls in mitigating them to attain the organisation's objectives.

Internal auditors analysed the organisation's water consumption patterns, measured water inflows and outflows, and identified areas of possible water wastage or inefficiency. In this case, internal auditors can discover areas of weakness or non-compliance with regulations to provide recommendations on methods to improve the system and the best practices for water management (Barrington & Ho, 2013). An organisation with complex organisational structures requires a professional internal audit to guarantee that scarce resources are utilised efficiently and effectively to enhance organisational performance (Khedikar & Raisonni, 2011). Hence, water audits can assist the organisation in saving water, reducing costs associated with water expenses, and improving overall water efficiency while ensuring that the organisation complies with the relevant water usage and efficiency regulations.

Another method internal auditors can assist organisations in implementing effective water management policies is by

contributing to building a water conservation culture in the organisation through close collaboration with the management and employees to raise awareness about the necessity of conserving water to protect all forms of life (Lyu et al., 2023). This may entail implementing training programmes and awareness campaigns and fostering behavioural changes within the organisation to encourage responsible water consumption and conservation practices. With their multifaceted role in water auditing, internal auditors not only play a role in assisting organisations to develop and implement effective water management policies and procedures, but they also play a role in providing an independent and objective assessment of the organisation's water management practices, ensuring a holistic approach to water auditing issues.

The second type is the assurance perspective, whereby the internal auditors play a crucial role in providing an independent and objective assessment of an organisation's water management practices, which aids in solving water auditing issues (He et al., 2007; Xu et al., 2022). An objective and unbiased assessment is important as it reasonably assures the organisation and its stakeholders. The internal auditors act as the compliance officers for water management standards within the organisation.

An internal auditor is responsible for assuring the organisation that they will conduct water audits with integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour in line with the fundamental principles and standards required of all auditors. Even though auditors prefer less regulation, they are accustomed to working under regulation and compliance and have traditionally relied on the rules and principles to guide their practices (Tingey-Holyoak & Pisaniello, 2019a). This implies that internal auditors are the most qualified to conduct a thorough and objective analysis of the organisation's water usage and management practices. Hence, they will examine data, interview key employees, and evaluate the internal control mechanisms to discover gaps or areas that require further improvement. Due to their independence and objectivity, they can guarantee that the water audit findings and recommendations are based on objective evidence rather than personal interests or biases.

Furthermore, internal auditors can assure the stakeholders that the organisation is managing risks while complying with regulations related to water usage and efficiency. In this modern age, stakeholders, such as customers, investors, and regulatory bodies, are more aware of the Sustainable Development Goals (SDG), which the United Nations introduced as a global effort to eradicate poverty, safeguard the environment, and ensure that all people can live in peace and prosperity by 2030. Thus, stakeholders are more concerned with the organisation's environmental sustainability effort as it helps them determine if the company is conducting their operation responsibly and accountably. Hence, organisations are more likely to face stakeholder pressure to improve water efficiency and conservation (Tingey-Holyoak & Pisaniello, 2018).

In this case, the unbiased assessment provided by the internal auditors will build the stakeholders' trust and confidence that the organisation is operating ethically and by-laws, regulations, and best practices in water conservation. The transparency of their objective assessment will help the organisation to implement effective controls to make better decisions. It also contributes to the organisation's overall reputation and sustainability based on the trust and confidence built to demonstrate its accountability to the stakeholders. The invaluable roles performed by internal auditors in water audits have yielded significant benefits, which will be thoroughly explored in the following discussion, revealing their remarkable impact in addressing water auditing issues.

#### **4. Dimension Discussion: Enhancing Water Management Through Effective Internal Audit Practices**

While conducting a water audit is an important step toward effective water management, the involvement of an internal auditor adds a new dimension of value to the practice (Kanwar et al., 2022). The internal auditor's expertise in areas like risk assessment and compliance makes them well-suited to evaluate the efficiency and effectiveness of water management through the water audit implementation within an organisation. Thus, by embracing the involvement of an internal auditor and leveraging their knowledge and skills, the organisations can benefit from the internal auditors' water audit practices, mainly on its water utilisation and management.

First and foremost, the involvement of internal auditors in water audit practices is paramount for enhancing cost efficiency in water usage within an organisation (Schilling-Vacaflor et al., 2021). Water auditing enables a comprehensive evaluation of water-related savings that can be achieved and maximised while minimising investment and operating costs (Byrne et al., 2019; Hazelton, 2014). By conducting a thorough water audit, internal auditors can analyse water consumption patterns, identify high-usage areas, and discover the best opportunities for water-related savings. Through their analysis, internal auditors can uncover areas where water consumption is excessive or inefficient and propose solutions that reduce water usage and lower associated costs. As a result, this contribution will help organisations save on water bills, energy costs associated with water pumping and treatment, and maintenance expenses.

Furthermore, the involvement of internal auditors in water audit practice could also contribute to optimising water utilisation (Barrington et al., 2013; Schilling-Vacaflor et al., 2021). This benefit can be achieved through proper water conservation measures by the internal auditors to examine how water is utilised to the optimum level. A study on plantation systems in Australia demonstrates the effectiveness of internal audits using water conservation measures in reducing overall water inputs and outputs by up to 40% (Barrington et al., 2013). This study emphasises that implementing water conservation measures in the water audit practice enables internal auditors to identify areas of water loss more easily. This, in turn, helps them pinpoint systemic areas within the organisation where water management can be improved through the water audit practice. Therefore, by comprehensively understanding water flow from its usage to its ultimate use, internal auditors can provide valuable insights to organisations, leading to improved water conservation practices.

Moreover, another benefit of involving internal auditors in the water audit practice is that it helps organisations improve decision-making in water management (Ma et al., 2021; Wu et al., 2020). Through water audit practice, internal auditors provide useful insights and recommendations based on their review of water accounting practices, which can help inform decision-making related to water management. The water audit practice serves as a decision-making tool utilised by directors, managers, and operators to allocate resources on water usage such as finances, time, and labour effectively (Khedikar & Raison, 2011). By conducting a water audit, internal auditors can provide critical data and analysis that enables decision-makers to make informed judgments on resource allocation concerning water management. In addition, water auditing also helps to create a pathway connecting monitoring and evaluation of water usage to the management, which then leads to decision-making (Lyu et al., 2023). Therefore, the participation of internal auditors in the water audit practice provides a comprehensive assessment that enables organisations to make better-informed judgments regarding their water consumption patterns, areas of inefficiency, and strategies for improvement.

The application of water audit reduces the gap between the users of water accounting reporting and the preparer of the report (Tello et al., 2016; Tingey-Holyoak & Pisaniello, 2019b). Such practice improves the transparency and disclosure of information, especially in water management. It will act as supporting documents to justify the information the organisation provides. The information can reduce the level of controversy in understanding the information provided. The reports are usually performed by several experts (Tingey-Holyoak & Pisaniello, 2019b), contributing to the increasing transparency of the report furnished.

Performing the water audit can reduce the conflict between several organisations or states within the countries (Wu et al., 2020; Zeng et al., 2021). The suggestion for improvement laid down by the internal auditors will be a possible solution to plan effective ways of solving the issues. In Malaysia, for example, the water supply catchment area is in State A, and State B utilises the water supply. The water audit seems useful to solve disputes between these two parties.

Overall, it is deemed that the involvement of internal auditors in water audit practices is important to bring substantial benefits to the organisations. With their expertise in risk assessment, compliance, and resource allocation, internal auditors contribute to comprehensive evaluations, identification of inefficiencies, and the proposal of effective solutions for water conservation. This collaboration enables organisations to achieve considerable cost savings, optimise water usage and make informed decisions to enhance overall water management practices. Embracing the participation of internal auditors in water audits is therefore essential for organisations seeking to improve their water conservation efforts and establish sustainable water management systems.

## **5. Discussion and Conclusion**

Water audit is believed to be tools to solve the water management issues in Malaysia. Utilising the current resources within the organisation, such as internal auditors, the organisation can manage water management issues. As stated by the rulings by the Malaysian Government, every organisation must establish an internal audit department. Therefore, the organisation can utilise its consulting and assurance roles. This paper argued that the role of internal auditors in water audits is to be an assurance provider or consulting provider for the organisation.

In Malaysia, the issues of water management still exist. This paper outlines the implications of utilising the roles of internal auditors in water management or water audits. It is proved that implementing a water audit can minimise the cost, optimise water consumption and improve decision-making. Water audits also can minimise the gap between the preparer and users and reduce the conflict among the users in the organisations. Therefore, it is evident from this report that a water audit is necessary to be performed by internal auditors because the involvement of an internal auditor helps to resolve water-related issues. Currently, in Malaysia, the internal auditing field is still developing. Thus, both governmental and private organisations in Malaysia must take significant measures. As a result,

implementing a water audit will serve as a useful tool to help educate and raise awareness among society and improve their understanding of current water practices.

### Acknowledgements

I acknowledge fund support by the Faculty of Accountancy, Universiti Teknologi MARA, Campus Selangor.

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