

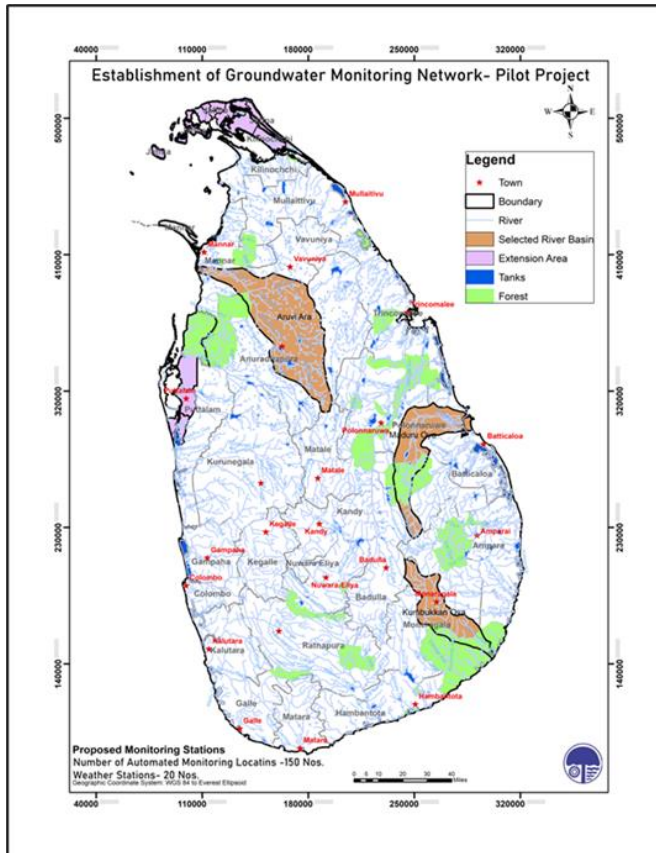
Importance of Groundwater Regulation in Sri Lanka

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Groundwater is a vital resource in Sri Lanka, providing a significant portion of the drinking water and supporting agricultural activities of the country. However, the unchecked extraction and contamination of groundwater can have severe consequences for both human health and the environment. As such, effective groundwater regulation is essential to ensure the sustainability and equitable use of this valuable resource. One of the primary reasons why groundwater regulation is so important in Sri Lanka is the rapid rate at which the resource is being depleted. Due to factors such as population growth, urbanization, and agricultural expansion, the demand for groundwater has increased significantly in recent decades. This has led to the over-extraction of groundwater in many areas, causing wells to deplete and groundwater levels to drop to dangerous levels. In some parts of the country, such as the Jaffna Peninsula, the over-extraction of groundwater has led to saltwater intrusion, rendering the groundwater unsuitable for use.

Research studies have shown that groundwater regulation is vital for water resources management in Sri Lanka. A study by Vijakanth et al. (2015) investigated the spatial and temporal variability of groundwater levels in the Jaffna Peninsula, which is one of the most heavily exploited areas for groundwater in Sri Lanka. The study found that groundwater levels had significantly declined in recent years due to over-extraction, leading to saline intrusion and water scarcity in the region. The authors emphasized the importance of implementing effective groundwater regulation to protect the resource from over-exploitation and depletion. Another study by Mahagama et al. (2015) evaluated the water quality of the shallow groundwater sources in the Kelani River basin, which is a critical source of drinking water for the capital city of Colombo. The study found that the groundwater was contaminated with nitrate and fecal coliform bacteria, posing significant risks to public health. The authors recommended the implementation of effective groundwater regulations to reduce contamination and ensure safe drinking water supply.

The Water Resources Board (WRB), which is the main regulatory body for groundwater resources management in Sri Lanka, recognizes the importance of groundwater regulation and has implemented several measures to ensure its sustainable use. To address above issues, WRB has implemented a comprehensive regulatory framework for groundwater management. The groundwater regulations of the country are based on the principles of sustainable use, equitable distribution, and environmental protection. The government has established WRB, which is responsible for managing the groundwater resources of the country and ensuring that they are used in a sustainable and equitable manner. One of the key strategies adopted by the WRB is the development of groundwater monitoring networks that provide real-time information on water levels, quality, and trends in some sensitive regions of the country such as Jaffa Peninsular, Puttalam, Malwathu Oya basin and Maduru Oya basin. This information is critical for the effective management of groundwater resources and the development of appropriate policies and regulations. Another important aspect of groundwater regulation in Sri Lanka is the implementation of a licensing system for groundwater abstraction. The WRB issues licenses to groundwater users, specifying the allowable rates of abstraction, water quality standards, and monitoring requirements. This licensing system has helped to regulate the amount of water abstracted from groundwater sources, reducing the risk of overexploitation and groundwater depletion.



In addition to regulatory measures, In Sri Lanka, it should be implemented various programs aimed at promoting sustainable groundwater use and reducing contamination. For example, the government should encourage the use of rainwater harvesting and provide subsidies to farmers who adopt sustainable irrigation practices. However, the country has also implemented a program to test and monitor groundwater quality, ensuring that contaminated sources are identified and remediated.

Figure 01: Groundwater monitoring network which provide real-time information



Figure 02: Some activities related to groundwater Regulation

In conclusion, groundwater regulation is critical for the sustainable use of water resources in Sri Lanka. The WRB has recognized the importance of regulating groundwater resources and has implemented several measures to ensure their sustainability. The licensing system for groundwater abstraction, groundwater monitoring networks, and water quality standards are some of the essential measures that have been put in place to protect and manage groundwater resources in Sri Lanka. The efforts of WRB are commendable and must be continued to ensure that groundwater resources are adequately managed, protected, and sustainably used for the benefit of present and future generations.

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