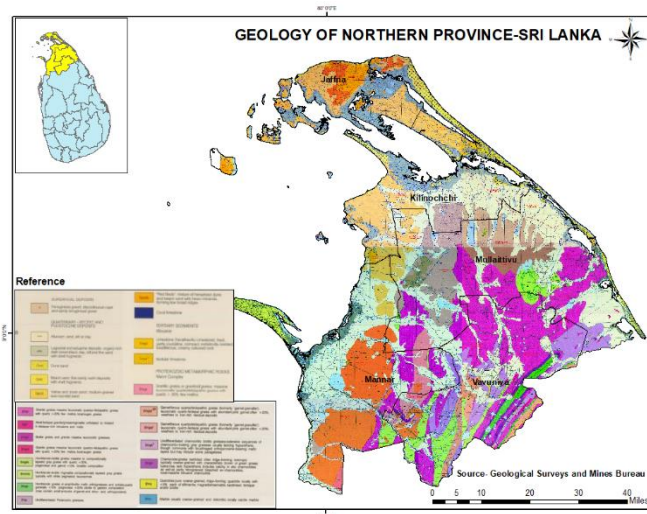


How far could rely on Groundwaters in Jaffna Peninsula?

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Jaffna Peninsula is located in Northern part of Sri Lanka where all the water requirement is mainly depended on groundwater resources and there is not existed any river basin within the Peninsula.

This limitation of the water availability is aggravated by seawater intrusion which contaminated the groundwater resources due to highly vulnerable aquifer setup of the Peninsula, especially the coastal areas of the peninsula. It is observed that high Electrical Conductivity (EC), high salinity, high chloride in the groundwater sources located in the coastal region of the peninsula.



According to the annual climatic data provided by Meteorological Department of Sri Lanka, most of the precipitation occurred during the months of October to February by second inter monsoon season and North-East monsoon season. Average annual precipitation is about 1,100 mm and temperature varies between 26°C to 33°C. Generally, from February to September, it is considered as driest season of the peninsular and October to January, it is considered as the wet season of the area. This indicated that the most of the period of a year, the peninsula is faced by extreme dry condition without the precipitation.

The demographic surveys (2016 census) have indicated the population of about 622,000 within the Jaffna District and, it tends to increase annually with the economic & development process. This makes the water demand is obviously ever increasing with time & the present water usage of different sectors of the district is tabulated which were taken from a Pilot study as follows.

Table 1: Approximate water usage in different sector in Jaffna District

No	Water Source	Daily Consumption(m ³)
01	Domestic wells	201,493
02	Agricultural wells	115,106
03	Common wells	35,716
04	Water supply schemes	896
05	Commercial wells	896
06	Others	41
	Total	354,148

Total well count in this calculation is 41,882 Nos. & therefore the average daily water consumption from a well is,

$$= 354148/41882$$

$$= 8.45\text{m}^3$$

Identified total numbers of wells in Jaffna District is around 131,000. Therefore, approximate total daily water consumption in the District

$$= 8.45\text{m}^3 \times 131,000$$

$$= 1,106,950 \text{ m}^3$$

Source: Analysis Data by Jaffna Well Monitoring Programme - Water Resources Board

From the above analysis of daily groundwater consumption, the approximate annual groundwater usage of Jaffna District is 404 MCM. The estimated average groundwater recharge of the district is

452 MCM as per a groundwater modeling setup in a study (*Assessment of Groundwater Resources in Jaffna Limestone Aquifer M. Thushyanthy and C.S. De Silva¹ Department of Agricultural Engineering University of Jaffna*). Despite further comprehensive assessment of water balance study is emphasized, these estimated volumes indicated the annual abstractions are in close proximity to the annual recharge reflecting the present groundwater usage in the region is in the maximum threshold limit and it is endangered if the abstraction increases beyond the present levels or either by climatic variabilities which is influenced by climatic changes such as rainfall changes etc.

With this, it is obvious that the necessary planning & managing of the groundwater resources of the region is inevitable to ensure the long-term sustainability and protection from the possible contaminations.