

## **REVIEW OF IRRIGATION PRACTICE IN INDIA, LESSONS FROM ISRAEL**

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**Abstract:** *Agriculture is backbone of Indian society. Agriculture is not possible without irrigation. For healthy crop timely and sufficient irrigation is must. Increased water demand for agriculture, caused by global population growth coupled with global warming, has resulted in dwindling of fresh water resources. The misuse of the available fresh water resources threatens sustainable agricultural development and economic growth. Maximizing the effectiveness and efficiency of water use in crop irrigation is therefore crucial.*

*India has about 140 million hectares of net cultivated area, out of which merely 45% is irrigated. Irrigation in India is done mainly through wells, tanks, canals, perennial canal, and multi-purpose river valley projects. In order to maximize effective use of available water for irrigation, Automation of the irrigation control process by using cutting edge technologies and lessons to be learned from advance countries in Agriculture, is very important. Israel is a well-established leader in water management, desalination and recycling techniques, Israel has set a template for reusing waste water for irrigation. It treats 80% of its domestic waste water, which is recycled for agricultural use and constitutes nearly 50% of the total water used for agriculture.*

*The main water source for agriculture in Israel is pressure drip irrigation systems. Drip irrigation has the highest water efficiency rate in agriculture, reaching a 70 to 80% rate, versus open irrigation, which achieves 40%. Recycled use of water, waste water, adding nutrients mixed in with the water and desalination are the recent new innovation used to solve problem of water scarcity in Israel. Israel government keeps an account of every single drop of water in country. Such framework to control inefficient use of water should also be developed in India. Israel has a proper guidelines, policies and technologies in cleaning up the river and to put a check on the pollution of river.*

*This study put an emphasis on why India is suffered from low agricultural production blessed with high potential of irrigation water resource, irrigable land, labor and suitable climate and why Israel is very effective in irrigated agriculture by having very low arable land, water resource, and with adverse climatic condition.*

*The objective of this paper is to review the various irrigation system of Israel and to identify the most common irrigation methods used for safe, efficient and sustainable agricultural production. In this study various research papers were reviewed on Indian irrigation system and lessons to be learned from Israel's long-term struggle and effort on the management of its irrigation water.*

**Keyword:** *Irrigation, Tanks, Canal, Drip irrigation.*