



Solution to India's Water Crisis

"The article is based on ["India's water problem has a simple solution"](#) that published in The Indian Express on 15th August. It talks about India's Water Crisis and its possible solution through Crop Diversification."

Context

- According to the **Composite Water Management Index (CWMI)** report released by the **NITI Aayog** in 2018, 21 major cities (Delhi, Bengaluru, Chennai, Hyderabad and others) are racing to reach zero groundwater levels by 2020, affecting access for 100 million people. The CWMI report also states that by 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people and an eventual **6% loss in the country's GDP**.
- Maharashtra and nearly half the country is facing an acute water shortage. Besides Maharashtra, Tamil Nadu, Karnataka, Rajasthan, parts of Gujarat, Punjab and Haryana are facing a water shortage of unprecedented level.

Agriculture and Water Crisis

- **90% of India's water is consumed in farming and 80% of this irrigation is for water-guzzling crops** — rice, wheat and sugarcane. Reducing this number is the most effective way of solving India's water problem.
- India's farmers, even in drought-prone areas, grow these water-intensive crops because **these crops have a steady demand** due to government assured procurement and Minimum Support Price (MSP).
- **Inefficient and dilapidated canal irrigation systems** have led to a spurt in groundwater development. India is the largest user of groundwater in the world with over 60% of irrigated agriculture and 85% of drinking water supplies dependent on aquifers.

Crop Diversification as a Solution to Reduce Water Usage in Agriculture

- **Diversify procurement operations** to include less water-intensive crops like millets, pulses and oilseeds, especially in India's drylands. This would incentivise farmers to grow them.
- Introduce these food grains in the mid-day meal scheme (**MDM**) and the integrated child development services (**ICDS**), which are the largest child nutrition programmes in human history.
 - This would **create an enormous and steady demand** for these crops. Farmers, in the regions where it is ecologically appropriate to grow them, would be incentivised to shift away from water-intensive crops.
- As we diversify the cropping pattern, aligning it more closely with India's agro-bio-geo-ecological diversity, voluminous quantities of water would be released for meeting the drinking water needs in both rural and urban areas, and the demands of industry.
- **Improvement in soil and water quality, higher and more stable net incomes for farmers, reduced malnutrition and obesity**, etc. are some added benefits of crop diversification besides lowering water demands in Agriculture.

Some other methods to reduce water usage in Agriculture

- **System of Rice Intensification (SRI)** has been adopted by several farmers especially in Bihar and Andhra Pradesh as a water-conserving method of paddy cultivation. The technique needs a bigger push from the Centre to make it a universal concept.
- Conservation techniques like **zero-tillage, raised-bed planting, precision farming and drip or sprinkler irrigation** have shown good results in soil and water conservation but needs further improvement in technology for wider acceptance.
- **Organic and nature based farming:** Studies have shown that organic farming conserves water by requiring less water in irrigation and also helps in improving water-storage capacity of soil by improving its health.

Way Forward

- There is a need for a paradigm shift. We urgently require a transition from this 'supply-and-supply-more water' provision to measures which lead towards improving water use efficiency, reducing leakages, recharging/restoring local water bodies as well as applying for higher tariffs and ownership by various stakeholders.
 - The formation of the Jal Shakti ministry is a promising step in the right direction.
- Aquifer recharge and rainwater conservation through **community ponds and recharge wells** should be promoted with involvement of gram sabhas. Lessons can also be drawn from the work of **Sankalpa Rural Development Society (SRDS)** which has been training farmers of Karnataka on revival of defunct borewells.
- **Participatory Governance** is needed to govern water resources. India's rivers and groundwater can be protected only if the integral interconnectedness of catchment areas, rivers and rural and urban aquifers is properly recognised.

Drishti Input:

"Water Crisis in India is also a result of excessive and rampant use of water in agriculture. Analyse. Also suggest