PLUTUS IAS

CURRENT AFFAIRS

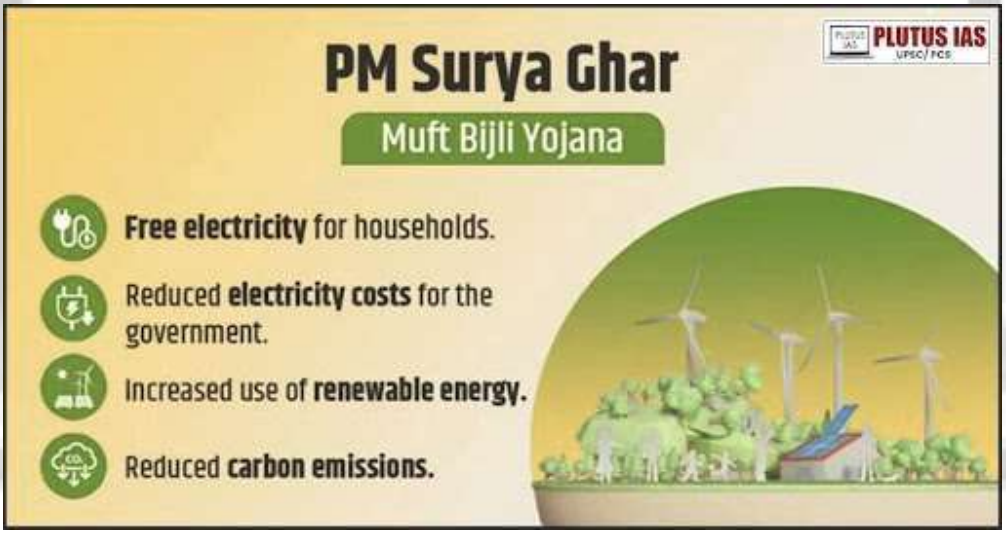
Argasia Education PVT. Ltd. (GST NO.-09AAPCAI478E1ZH)
Address: Basement C59 Noida, opposite to Priyagold Building gate, Sector 02,
Pocket I, Noida, Uttar Pradesh, 201301, CONTACT NO:-8448440231

Date –13- February 2025

PM SURYA GHAR YOJANA: TRANSFORMING INDIA'S ENERGY LANDSCAPE

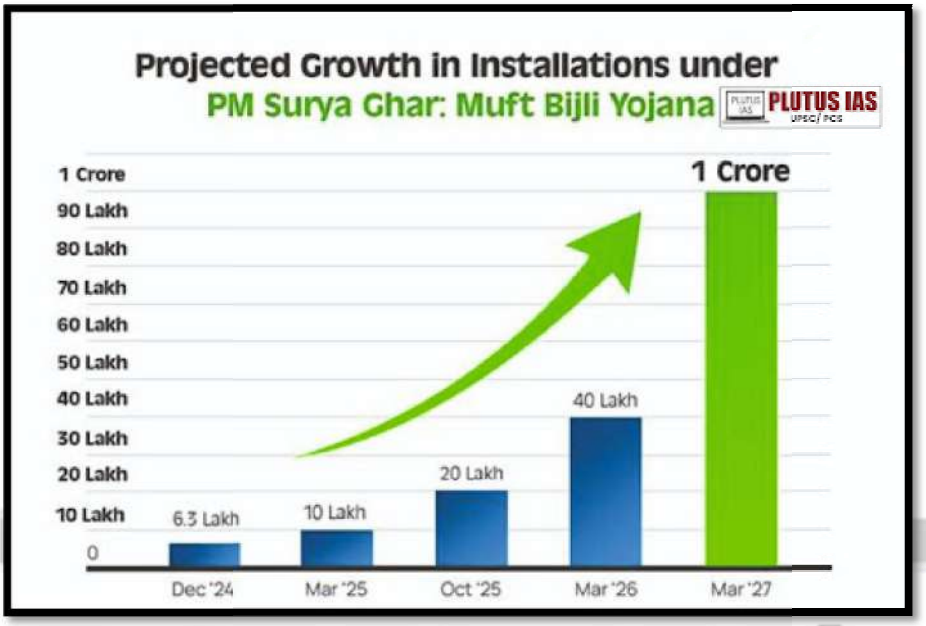
WHY IN THE NEWS?

On February 13, 2025, PM Surya Ghar: Muft Bijli Yojana (PMSGMBY) marks its first anniversary, celebrating a year of empowering households with affordable solar energy and advancing India's sustainable energy transition. Launched by Prime Minister Narendra Modi on February 13, 2024, this initiative aims to provide free electricity through rooftop solar panel installations.

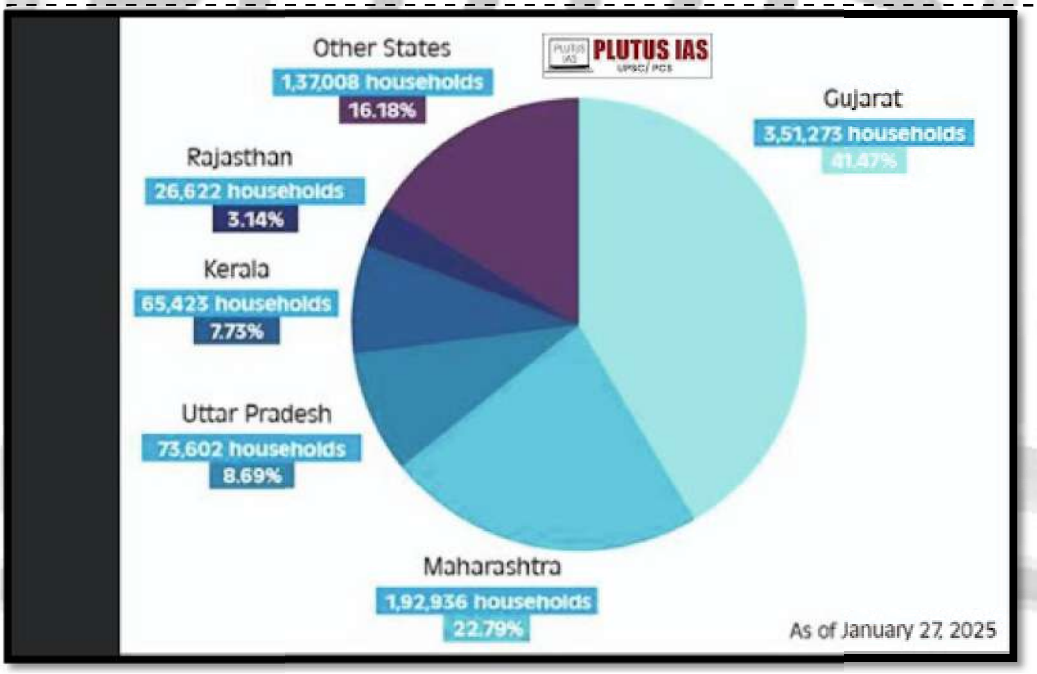


WHAT IS PM SURYA GHAR: MUFT BIJLI YOJANA (PMSGMBY)?

Prime Minister Narendra Modi launched the PM Surya Ghar: Muft Bijli Yojana (PMSGMBY) on February 13, 2024. It is the world's largest domestic rooftop solar initiative. By facilitating rooftop solar panel installations, it aims to provide free electricity to households, making renewable energy more accessible and affordable.



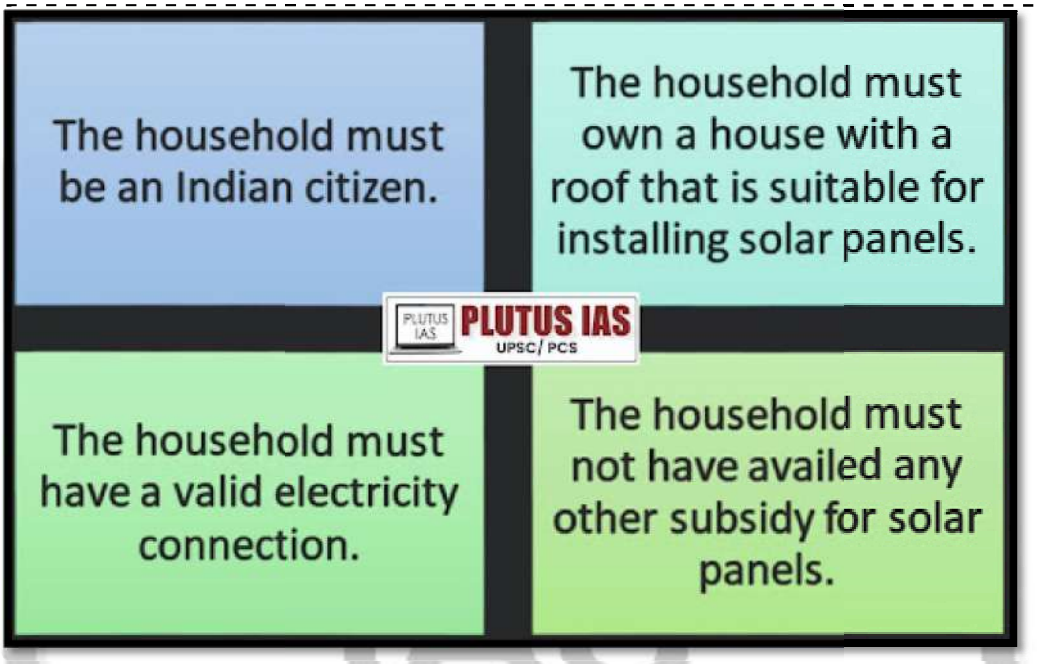
KEY ACHIEVEMENTS OF PM SURYA GHAR: MUFT BIJLI YOJANA



Metric	Details
Households Benefitted	**8.46 lakh** (as of January 27, 2025)
Installation Growth	**Tenfold increase** in monthly installations, now averaging **70,000 per month**
Subsidy Support	Up to **40% subsidy** to make solar energy affordable
Financial Assistance	₹4,308.66 crore disbursed as **Central Financial Assistance (CFA)** to **5.54 lakh residential consumers**

Metric	Details
Average Subsidy Per Household	₹77,800
Zero Electricity Bills	**45% of beneficiaries** now enjoy **zero electricity bills** based on their solar power generation and consumption patterns

ELIGIBILITY



BENEFITS OF PM SURYA GHAR: MUFT BIJLI YOJANA

Household Savings & Income Generation – Households benefit from lower electricity bills and can earn revenue by selling surplus solar power to DISCOMs. A 3-kW system can generate over 300 units per month, ensuring energy security and potential earnings.

Expansion of Solar Capacity – The scheme aims to add 30 GW of rooftop solar capacity in the residential sector, significantly accelerating India's renewable energy transition.

Boost to Renewable Energy Goals—This supports India's commitment to achieving 500 GW of non-fossil fuel energy capacity by 2030, strengthening energy sustainability.

Environmental Impact—Over its 25-year lifetime, the scheme is expected to generate 1000 BUs of electricity and reduce CO_2 emissions by 720 million tonnes, helping combat climate change.

Job Creation – Expected to create 17 lakh direct jobs in manufacturing, logistics, supply chain, sales, installation, and operations & maintenance (O&M), fostering economic growth.

Energy Security & Grid Stability – Decentralized rooftop solar installations will reduce transmission losses, enhance grid stability, and decrease reliance on fossil fuels.

Lower Dependence on Conventional Power – Reduces demand on coal-based power plants, leading to a cleaner energy mix and improved air quality.

Empowerment of Rural & Urban Households – Provides affordable, reliable, and sustainable energy solutions to both urban and rural households, improving their overall quality of life.

KEY RENEWABLE ENERGY & ELECTRIFICATION INITIATIVES IN INDIA

Programme	Launched Date	Key Objectives
International Solar Alliance (ISA)	**2015**	Global alliance to promote **solar energy adoption** and reduce fossil fuel dependency.
Solar Energy Corporation of India (SECI)	**2011**	Implements **grid-connected rooftop solar projects** in partnership with the Education Ministry.
Solar Parks Scheme	**2014**	Establishes **solar parks & ultra-mega solar power projects** across India.
Bhaskara Advanced Solar Energy (BASE) Programme	**2013**	Supports the development of **students and scientists** in solar energy research.
Renewable Energy Certificate (REC) Scheme	**2010**	Allows renewable energy producers to **sell certificates** to distribution firms and industries.
Green Hydrogen Mission	**2023**	Promotes the production and adoption of **green hydrogen** as a clean energy alternative.
Perform, Achieve & Trade (PAT) Scheme	**2012**	Enhances **energy efficiency** in energy-intensive industries through tradable energy-saving certificates.
Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)	**2017**	Ensures **affordable and reliable electricity** for all rural and urban households.
Ujjwala Scheme (PMUY)	**2016**	Provides **free LPG connections** to poor households, reducing dependence on traditional fuels.
Green Energy Corridor (GEC)	**2013**	Integrates **renewable energy** into India's national transmission grid for stable power supply.
Indian Renewable Energy Development Agency (IREDA)	**1987**	Provides **financial support** for renewable energy and energy conservation projects.

CHALLENGES IN INDIA'S CLEAN ENERGY TRANSITION

Challenges	Details
High Installation Costs	Solar panel installation remains expensive, limiting widespread adoption.
Coal Dependency	India still relies on **60% coal-based** energy, slowing the renewable transition.
Financial Constraints	Shortage of financial resources and high upfront costs hinder clean energy projects.
Land Acquisition Issues	Difficulties in acquiring land, especially for **wind farms** in populated areas.

Challenges	Details
Grid Integration	Renewable energy fluctuations require significant **grid upgrades** for stability.
Energy Storage	Limited storage solutions make managing **intermittent solar & wind power** challenging.
Infrastructure Limitations	Existing power infrastructure struggles to handle **large-scale renewable energy**.
Regulatory Hurdles	Lack of **clear policies** discourages investment in clean energy projects.
Technical Expertise	Shortage of skilled professionals for **design, implementation & maintenance**.
Social & Environmental Concerns	Addressing community and **ecosystem impacts** of renewable projects.
Public Awareness	Need to educate people on **clean energy benefits & adoption**.

STRATEGIES TO PROMOTE CLEAN ENERGY IN INDIA

Strategies	Implementation
Enhancing Grid Connectivity	Strengthening **transmission networks** for efficient renewable integration.
Solar Rooftop Mission	Expanding rooftop solar to **reduce individual household electricity needs**.
PM Surya Ghar Yojana	A game-changer for **marginalized and low-income groups**.
Modern Solar Village Programme	Supporting rural areas in becoming **self-reliant through solar energy**.
Boosting Private Sector Participation	Encouraging **domestic & foreign companies** to invest in large-scale renewable projects.
Expanding Financial Incentives	Providing **low-interest loans, subsidies, & tax benefits** for clean energy projects.
Strengthening International Collaboration	Partnering with **USA, Denmark, Germany & Japan** for technology transfer & joint projects.
Research & Development in Storage Solutions	Focusing on **battery storage, hydrogen fuel & smart grids** for energy efficiency.
Reducing DISCOM Burden	Implementing reforms to **ease financial pressure on power distribution companies**.

Strategies	Implementation
Promoting Nuclear Energy	Strengthening the **National Nuclear Mission** for alternative power sources.
Exploring Geothermal Energy	Harnessing **Puga Valley (Himachal Pradesh)** for geothermal energy production.
Developing Offshore Wind Energy	Expanding **offshore wind farms** to utilize India's vast coastline for clean power.

CONCLUSION

The PM Surya Ghar: Muft Bijli Yojana is revolutionizing India's energy landscape by empowering households with solar power. With installations set to exceed 10 lakh by March 2025, 20 lakh by October 2025, and 40 lakh by March 2026, the scheme is on track to achieve its ambitious one crore target by March 2027. By saving the government ₹75,000 crore annually, reducing carbon emissions, and creating jobs, the initiative cements India's leadership in clean energy.

PRELIMS QUESTION:

Q. Consider the following statements regarding the PM Surya Ghar: Muft Bijli Yojana (PMSGMBY):

1. PMSGMBY is a central sector scheme.
2. To avail of the benefits of PMSGMBY, a person must be a citizen of India.
3. PMSGMBY aims to reduce GHG emissions by reducing the coal-based energy demand.

How many of the above-given statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

ANSWER: C

MAINS QUESTION:

Q. To what extent can rooftop solar initiatives like PMSGMBY contribute to India's net-zero target? Examine the challenges and suggest measures for effective implementation.
(Answer in 250 words)

Munde Dhananjay Navnath

A MILESTONE IN INDIA'S RURAL WATER REVOLUTION: JAL JEEVAN MISSION

WHY IN THE NEWS?

The Jal Jeevan Mission (JJM) is making headlines due to its ambitious goal of providing clean tap water to every rural household in India by 2024. Launched by Prime Minister Narendra Modi, the initiative aims to drastically reduce the gap between rural and urban water access. With only 17% of rural households having tap water connections at the time of launch, JJM plans to deliver water to nearly 16 crore additional households, directly benefiting over 19 crore rural families. This effort is not only about improving access but also enhancing public health and tackling disparities in water supply. The mission's progress is closely watched as it works towards its 2024 target, reshaping the water supply landscape for rural India.

KEY ACHIEVEMENTS:

As of August 12, 2024, 11.82 crore additional rural households have been connected to tap water under the JJM, bringing the total to 15.07 crore households (77.98% of rural households). This milestone significantly impacts rural populations by ensuring consistent access to potable water.

OBJECTIVES OF THE JAL JEEVAN MISSION

1. Provide tap water connections to every rural household.
2. Prioritize areas affected by poor water quality, drought, deserts, and villages under the Sansad Adarsh Gram Yojana (SAGY).
3. Provide tap water to essential public facilities, including schools, Anganwadi centres, health centres, and community buildings.
4. Monitor the functionality of tap connections to ensure consistent supply.

5. Encourage community participation (through cash, kind, or labour) to foster ownership of the project.
6. Ensure sustainability by maintaining water sources, infrastructure, and regular operational funding.
7. Empower the workforce in the water sector by training in various areas such as construction, plumbing, water quality management, and more.
8. Raise awareness about safe drinking water and promote shared responsibility among all stakeholders.

COMPONENTS UNDER JJM:

1. Development of Infrastructure: Creating or upgrading in-village piped water supply systems to connect every rural household to reliable tap water.

2. Augmentation of Water Sources: Developing and enhancing reliable sources of water, such as wells, borewells, rivers, or reservoirs, to ensure a sustainable water supply in rural areas.

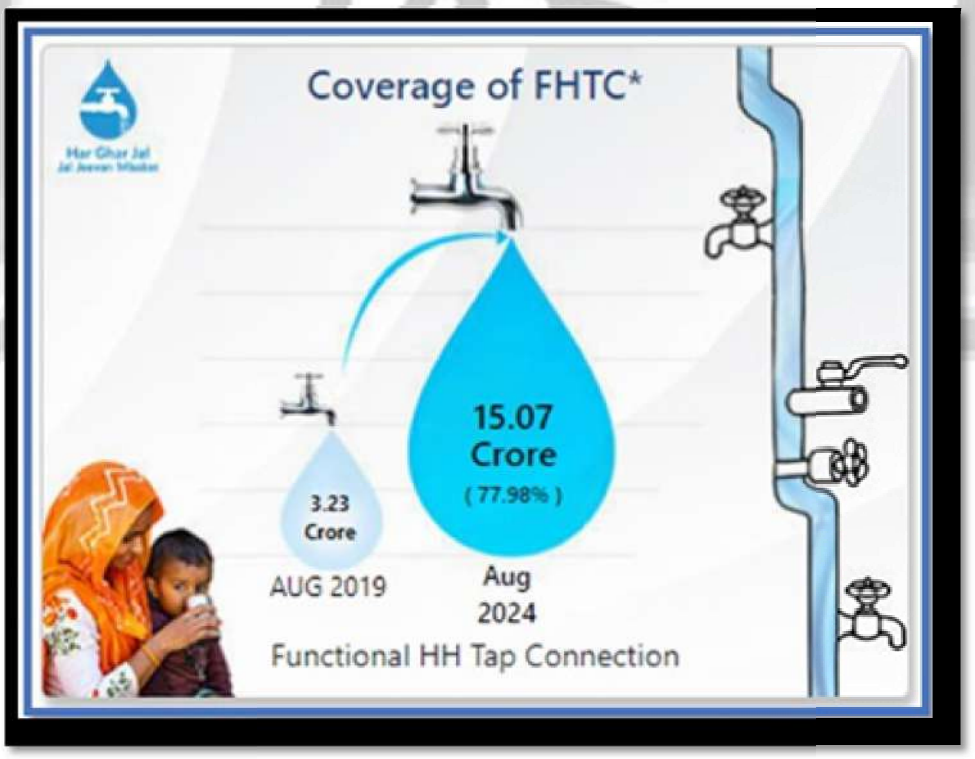
3. Bulk Water Treatment and Transfer: Establishing or improving water treatment plants and bulk water transfer systems to ensure that clean, safe water reaches villages, especially in areas where local sources are insufficient.

4. Technological Interventions for Contaminant Removal: Installing technologies in areas where water quality issues, such as contamination by arsenic, fluoride, or iron, affect the water supply. These technologies help ensure that water is potable and safe for consumption.

5. Retrofitting Existing Water Schemes: Upgrading and modifying ongoing or completed water supply schemes to ensure that every household receives at least 55 litres of water per capita per day (lpcd).

6. Greywater Management: Implementing systems to manage and recycle greywater (wastewater from baths, sinks, etc.), reducing water wastage and promoting sustainable water use practices within rural communities.

7. Flexi Funds for Unforeseen Challenges: Provision of Flexi Funds to address unforeseen challenges such as those arising from natural disasters, enabling timely and effective responses to safeguard the water supply.



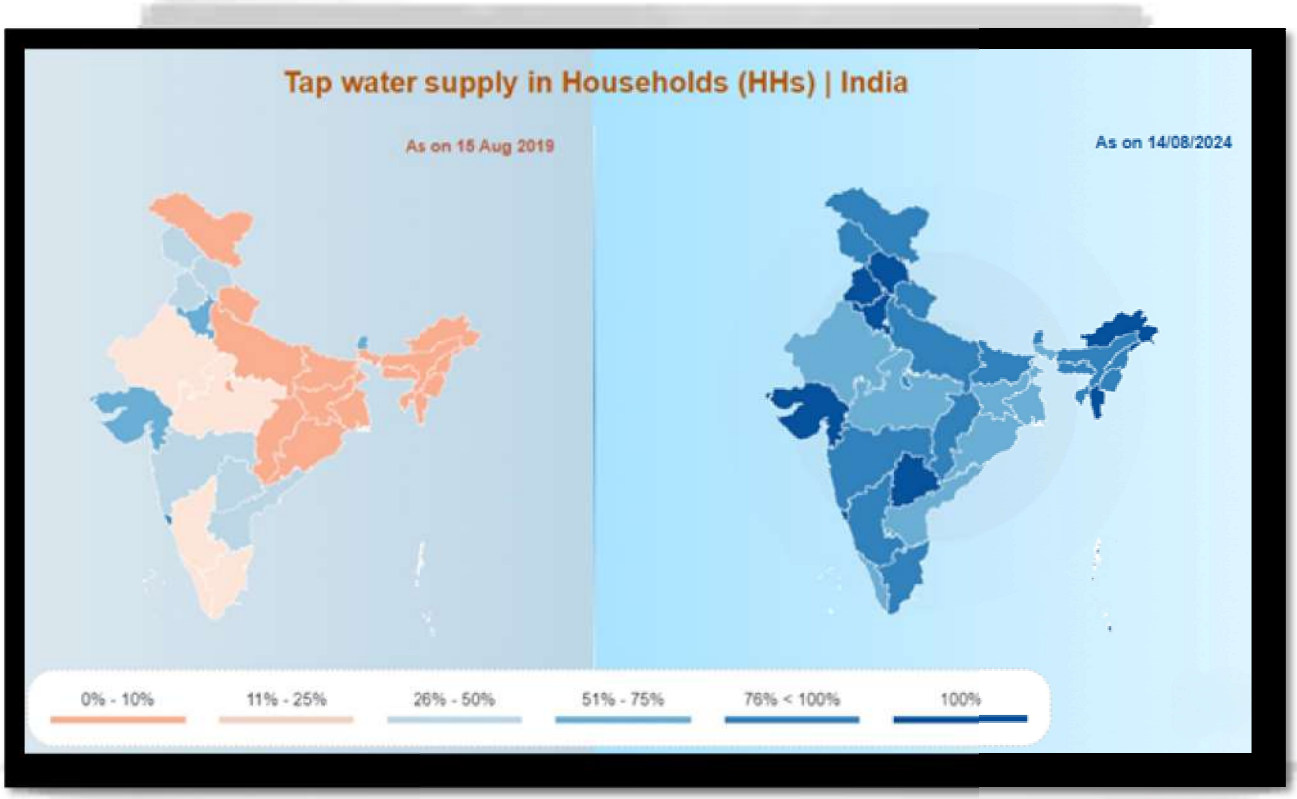
IMPACT OF JJM

1. Time-saving: The mission saves an estimated 5.5 crore hours daily, mostly for women who no longer need to spend hours fetching water from distant sources.

2. Health Improvements: By providing safe drinking water, JJM helps prevent 400,000 deaths annually due to waterborne diseases like diarrhoea, which is a leading cause of death in rural areas. The initiative is also projected to save 14 million Disability-Adjusted Life Years (DALYs), indicating a significant improvement in public health.

3. Reduction in Child Mortality: According to Nobel Laureate Prof. Michael Kremer's research, safe water coverage can reduce child mortality among those under five by 30%, potentially saving 136,000 children's lives every year.

4. Job Creation: JJM's implementation is expected to generate 59.9 lakh person-years of direct employment during its capital expenditure phase. Additionally, 13.3 lakh person-years of direct employment will be generated during the operation and maintenance phase.



CHALLENGES AND SOLUTIONS IN JAL JEEVAN MISSION (JJM):

Challenges	Solutions
Lack of Reliable Water Sources	Financial assistance from the Ministry of Finance for infrastructure development.
Groundwater Contamination	Technological interventions like filtration systems (e.g., reverse osmosis) for safe drinking water.
Uneven Geographical Terrain	Decentralized water supply systems, such as solar-powered pumps and rainwater harvesting.

Challenges	Solutions
Scattered Rural Habitations	Bulk water transfer and decentralized systems for remote areas.
Regulatory Delays	Streamlined regulatory processes and coordination for faster statutory clearances.
Lack of Skilled Personnel	The Nal Jal Mitra Programme to train local personnel in water supply management.
Inefficient Implementation	Establishment of State and District Programme Management Units (PMUs) to monitor progress.

FACTORS RESPONSIBLE FOR WATER SCARCITY IN INDIA:

1. Climate Change: Altered rainfall patterns and increasing frequency of droughts due to global warming affect water availability in many regions, particularly in arid and semi-arid areas.

2. Over-extraction of Groundwater: Over-reliance on groundwater for irrigation, drinking water, and industrial use has led to the depletion of aquifers in several parts of India, causing wells and borewells to dry up.

3. Pollution: Industrial and domestic waste contaminating rivers, lakes, and groundwater resources leads to reduced availability of clean and safe water for consumption.

4. Population Growth: Rapid population growth increases the demand for water, making it difficult to meet the needs of rural and urban areas alike, especially in water-scarce regions.

5. Agricultural Practices: Irrigation inefficiencies, such as flood irrigation and the overuse of water-intensive crops (e.g., rice, sugarcane), place immense pressure on available water resources.

6. Water Management Issues: Lack of proper water management and inefficient distribution networks result in wastage of water and unequal distribution across regions.

7. Deforestation: Deforestation and land degradation reduce the natural water retention capacity of the environment, leading to soil erosion, reduced groundwater recharge, and poor water retention in the ecosystem.

8. Limited Water Storage Infrastructure: Inadequate reservoirs, dams, and rainwater harvesting systems reduce the ability to store and manage water for future use, especially during dry seasons.

9. Urbanization: Rapid urban expansion increases the demand for water but often lacks proper planning and infrastructure for sustainable water supply and wastewater management.

WAYS TO ENSURE THE SUSTAINABILITY OF WATER SOURCES FOR EVERYONE:

1. Promote Water Conservation: Encourage water-saving practices like rainwater harvesting, reducing water wastage, and water-efficient appliances at homes, farms, and industries.

2. Implement Efficient Irrigation Techniques: Adopt drip irrigation, sprinkler systems, and crop selection suited to local water availability to reduce water usage in agriculture.

3. Protect Natural Water Bodies: Conserve rivers, lakes, and wetlands by preventing pollution and encroachment and implementing strict regulations to protect these vital water sources.

4. Increase Groundwater Recharge: Promote recharge pits, percolation tanks, and natural recharge systems to replenish groundwater levels and prevent over-extraction.

5. Water Recycling and Reuse: Encourage the reuse of wastewater for non-potable purposes (e.g., agriculture, landscaping) and establish systems for greywater recycling.

6. Reduce Pollution: Strengthen policies and enforcement on industrial effluent treatment, sewage management, and plastic waste reduction to prevent contamination of water sources.
7. Restore Watersheds and Forests: Protect and restore watershed areas and forests, which play a crucial role in maintaining the natural hydrological cycle and ensuring proper water flow.
8. Public Awareness and Education: Raise awareness about the importance of sustainable water use and conservation at the community level, through programs, campaigns, and educational initiatives.

CONCLUSION:

The Jal Jeevan Mission is a transformative initiative aimed at ensuring that every rural household in India has access to safe and reliable tap water by 2024. With significant progress already made, the mission is poised to improve the health, education, and socio-economic conditions of rural communities across the country while also promoting sustainable water management practices.

PRELIMS QUESTIONS:

Q. With reference to the Jal Jeevan Mission, consider the following statements:
1. The mission aims to provide clean tap water to every rural household in India by 2024.
2. As of August 2024, the Jal Jeevan Mission has connected 11.82 crore rural households to tap water.
3. The mission exclusively focuses on urban areas to ensure reliable water supply.
How many of the above-given statements are correct?
A. Only one
B. Only two
C. All three
D. None
Answer: A

MAINS QUESTIONS:

Q. Discuss the key components of the Jal Jeevan Mission and its potential impact on rural India.
(250 words, 15 marks)

Ritik singh