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Desalination Plants Harm Environment: UN

According to a **U.N. backed study**, desalination plants across the world produce **highly salty waste water** and **toxic chemicals** that are damaging the environment.

- This study was part of research into how best to secure fresh water for a rising population without harming the environment.
- Desalination plants around the world are pumping out far more **salt laden brine** than previously believed. The brine raises the level of salinity and poses a major risk to ocean life and marine ecosystems.
- Brine, water comprising **about 5% salt**, often includes toxins such as **chlorine and copper** used in desalination. By contrast, global **seawater is about 3.5% salt**.
- More than half the brine comes from **four middle eastern countries**. These are Saudi Arabia, the United Arab Emirates, Kuwait and Qatar, with **Saudi Arabia alone responsible for 22% of the effluent**.

Desalination

Desalination is the process of **removing salts from water** to produce water that meets the quality (salinity) requirements of different human uses. Seawater desalination can extend water supplies beyond what is available from the hydrological cycle, providing an “unlimited”, climate-independent and steady supply of high-quality water.

Background

- The “conventional” sources of water such as rainfall, snow-melt and river runoff captured in lakes, rivers, and aquifers are no longer sufficient to meet human demands in water-scarce areas. This is in direct conflict with **Sustainable Development Goal (SDG) 6**, aimed at ensuring the **availability of clean water for current and future generations**.

- While water demand mitigation approaches such as water conservation and improved efficiencies can somewhat close the water demand and supply gap, these approaches must be combined with supply enhancement strategies in order to combat water scarcity.
- Among the water supply enhancement options, desalination of sea-water and highly brackish water has received the most consideration and is increasingly seen as a viable option to meet primarily domestic and municipal needs.

Impacts

- There is an **increase in the temperature** of this zone of the sea, together they **decrease the dissolved oxygen level**, which is called **hypoxia** and that impacts the aquatic life in that zone.
- Hypoxia often leads to the formation of dead zones in the oceans. These zones have quadrupled since 1950, mainly as a result of climate change. Now the **excess salt is adding** to these problems.
- Since **brine is denser than seawater**, it sinks to the seafloor and disrupts vibrant communities of life, which find themselves wanting far less salt and far more oxygen.
- Desalination requires **large amount of energy to process seawater**, which is met by burning fossil fuels **contributing to global warming**.
- Compounding the problem is the ongoing expansion of desalination as more and more countries turn to the technology in the face of climate change which is exacerbating water shortages.

Opportunities

- The discharge (brine) can also contain precious **elements like uranium, strontium as well as sodium and magnesium** which have the **potential to be mined**.
- Brine has been used for **aquaculture, with increases in fish biomass of 300%**. It has also been successfully used to cultivate the dietary supplement Spirulina, and to irrigate forage shrubs and crops.
- There is a need to convert an **environmental problem into an economic opportunity**. This is particularly important in countries producing large volumes of brine with relatively low efficiencies.

Conclusion

- Due to the relatively high economic costs, desalination is currently concentrated in high income and developed countries.
- There is a need to make desalination technologies more affordable and extend them to low income and lower middle income countries, increasing the viability of desalination for addressing SDG 6 in areas that developments have previously been

limited by high economic costs.

- To do this, technological refinement for low environmental impacts and economic costs, along with innovative financial mechanisms to support the sustainability of desalination schemes, will likely be required.

Devadasis System Still Prevalent

The National Law School of India University (NLSIU), Bengaluru, and the Tata Institute of Social Sciences (TISS) in Mumbai have studied the exploitative system of Devadasis.

- Though widely believed to have been abandoned decades ago, the practice has not died down completely in several parts of the country.
- The study paints a grim picture of the apathetic approach of the legislature and enforcement agencies to crack down on the practice, particularly prevalent among oppressed communities of north Karnataka.

What is the Devadasis System?

It is the **practice of dedicating young girls to temples as an offering to appease the gods**. This practice persists mainly in south India especially in the states of Karnataka and Tamil Nadu.

Findings of the Report

- **Legal Framework**
 - Karnataka is yet to draft State Rules for the **Karnataka Devadasi (Prohibition of Dedication) Act, 1982 (KDPD Act)** despite three decades of the Act being in existence.
 - Dedicated children are not explicitly recognized as children in need of care and protection under **the Juvenile Justice Act 2015 (JJ Act)**, despite the involvement of family and relatives in their sexual exploitation.
 - **Immoral Traffic Prevention Act, 1956 (ITPA Act) and Trafficking of Persons (Prevention, Protection, and Rehabilitation) Bill 2018** does not recognize dedicated girls as victims of trafficking for sexual purposes.
- **Offenses**
 - 92% of the respondents were **dedicated when they were minors** (4-12 years - 53%; 13-18 years - 39%). Girls who are forced to become Devdasis are **sexually exploited**. 50% of the respondents were **sexually abused as minors**.
 - **Superstitious beliefs, community pressure, disability, tradition, and continuation of lineage** among others are some of the reasons behind the continued practice.

- Special **children, with physical or mental disabilities**, are more **vulnerable** to be dedicated as devadasis.
- Very **low reporting of cases of Devadasi dedication** was found, only four cases filed under the KDPD Act (between 2011-2017).
- **Awareness**
 - Only **48% of the Devadasis** and the community **knew of the legislation** banning dedication.
 - **NGOs have no understanding** of the provisions under KDPD Act or the knowledge of how to use the Protection of Children from Sexual Offences (POCSO) Act 2012, Juvenile Justice Act or Indian Penal Code in cases of dedication.
 - In most cases, **the law enforcement agencies were unaware that the practice of devadasis** dedication is taking place.

Issues and Challenges

- **Society's acceptance: Devadasi dedication** and the resulting sexual abuse of these girl children are **accepted and celebrated by society**. Those willing to report also **fear the backlash of the society** and community and refrain from reporting.
- **Ineffective awareness programmes: Awareness generation** about the provisions of the legislation, in communities where the prevalence of dedication is high, **is absent**. Even those awareness programmes conducted fail to bring any behavioral change within the community.
- **Lack of Police Action:** The **police are failing to take Suo Motu action** in cases of dedication and are not registering cases coming to them due to pressure from the community.
- **Non-cooperative victims: Unwillingness of the victims to report against their parents** or relatives becomes a big challenge. Even if the case is registered, there is a high probability of the victim turning hostile.
- **Inadequate preventive measures:** The functionaries and the law enforcement agencies are not taking any measures to prevent dedication from taking place and focus only on schemes to be given to the older Devadasis.
- **Lack of coordination:** There is a **lack of coordination between the various departments, agencies, and functionaries** which is leading to ineffective efforts to stop the practice of Devadasi dedication.
- **Poor implementation of legislation:** There are several provisions under different laws (POCSO, ITPA, JJ Act, IPC) that would be relevant in the case of the dedication of a girl. However, there is a lack of application of all these legislations.
- **Health Risks:** The devadasis who are forced into prostitution become vulnerable to sexually transmitted diseases like AIDS.

Recommendations

- **Police**

- **Police can take Suo Motu action** against a person when there is a complaint or reliable information.
- The police should to **proactively engage with vulnerable communities** and act on the information at hand.
- Dedication cases must come under the purview of IPC and ITPA even after the girl/woman is dedicated and initiated into sex, to acknowledge the continuous sexual violence, and provide rescue and rehabilitation services.

- **Department of Women and Child Development**

- Department must conduct the periodical survey, to better understand the prevalence and trend of Devadasi System and provide rehabilitation to those affected.
- Gainful employment options must be made available for younger Devadasi women through vocational training programmes.
- Girl children of Devadasi women must be identified and provided scholarships until they turn 18 years of age.
- Devadasi Dedication Prohibition Officer must map the locations within the district that are prone to Devadasi dedication and must proactively rescue the dedicated child.

- **Legal Services Authority**

- District legal services authority must prioritize legal awareness programmes on Devadasi dedication Act.
- The community must be made aware of multiple reporting mechanisms, such as approaching the Childline, District Magistrate, police, and District Legal Services Authority.

- **Department of Education**

- Enrolment drives should be conducted to ensure all children are in school, and to prevent children from being pushed into child labor, child marriage, or dedicated as Devadasi.
- Adults should be educated not to give in to superstitious beliefs.

- **Law Reforms**

KDPD Act 1982, Indian Penal Code 1860, Juvenile Justice Act 2015, Trafficking of Persons (Prevention, Protection, and Rehabilitation) Bill 2018 must be adequately amended to address the issue of Devadasi.

- **Community Vigilante**

- Young girls who have been dedicated as Devadasi should be identified and their groups should be formed. They should be given training and encouraged to stop dedication from taking place in their villages.
- Youth groups, Panchayat members, Kishori group and women's self-help groups must be made vigilant about the continuance of Devadasi dedication practice.

Important Facts for Prelims (15th January 2019)

Army Day 2019

- **15th January** is celebrated as '**Army Day**' by Indian Army.
- The January 15th is the day when **General (later Field Marshal) K.M Carriappa** took over the command of Army from General Sir **F.R.R Bucher, the last British Commander-in-Chief in 1949** and became the **first Commander-in-Chief of Indian Army post-independence**.

Agasthyarkoodam Peak, Kerala

- The defense Spokesperson K Dhanya Sanal has become the **first woman to begin scaling 1,868-metre-tall Agasthyarkoodam** - the **second highest peak of Kerala** - traditionally open only to men.
Anai Mudi is the highest peak in the Western Ghats and South India, at an elevation of 2,695 meters.
- After the order of Kerala High Court, the Forest Department lifted the ban preventing women from summiting Agasthyarkoodam.
- The local **Kani tribes** living on the foothills have opposed this. According to them, the mountain range is the holy abode of their deity '**Agastya Muni**' - a Hindu sage believed to be the guardian of the inhabitants.
- Agasthyarkoodam peak is located in the **Neyyar Wildlife Sanctuary, in Agasthyamala Biosphere Reserve, Kerala**.
- Agasthyamala Biosphere Reserve is among **20 new sites added by UNESCO** to its World Network of Biosphere Reserves in March 2016.

Philip Kotler Presidential Award

- Prime Minister of India, Narendra Modi has been awarded **first-ever Philip Kotler Presidential Award** by **World Marketing Summit India**.
- The Award focuses on the triple-bottom-line of **People, Profit, and Planet**. It will be offered annually to the leader of a Nation.
- Prof. Philip Kotler is a world-renowned Professor of Marketing at Northwestern University, Kellogg School of Management, U.S.

Spiritual Circuit in Kerala

- A spiritual circuit linking 133 religious places spread over 14 districts in **Kerala** has been given the nod by the Union Ministry of Tourism under the Swadesh Darshan scheme.

- The destinations have been selected keeping in view the inherent historic, cultural and religious significance of the places.
- The development works include Community hall, Annadhana Mandapam, Multipurpose hall, toilets, cafeteria, parking facilities, landscaping, pathways, illuminations, signages, dustbins etc.

Womaniya on Government e Marketplace

- **Government e Marketplace [GeM]** has launched **“Womaniya on GeM”**, an initiative to enable women entrepreneurs and women self-help groups (WSHGs) to sell handicrafts and handloom, accessories, jute and coir products, home décor and office furnishings, directly to various Government ministries, departments and institutions.
- The initiative seeks to develop women entrepreneurship on the margins of society to achieve **gender-inclusive economic growth**.

Background

- Nearly 80% women-owned establishments are self-financed and more than 60% of 8 million units are owned and or led by women entrepreneurs from socially-challenged sections of the society.
- Since women tend to invest up to **90% of their earnings back in their families** to provide better nutrition, health care and education to their children, economic empowerment of women is a step in the **direction of poverty alleviation**.
- The initiative aligns with Government’s initiatives for MSMEs, especially to reserve 3% in government procurement from women entrepreneurs.
- Womaniya on GeM will spur hyper-local economic opportunities for women entrepreneurs and address goals and objectives under United Nations **Sustainable Development Goal 5: Achieve gender equality and empower all women and girls**.

End-to-End Prediction System for Thunderstorms/Lightning

- The **India Meteorological Department (IMD)** will be implementing an **end-to-end prediction** system for predicting **thunderstorms/lightning** by April 2019.
- It will be developed by **Indian Institute of Tropical Meteorology (IITM), Pune and IMD, New Delhi**.
- IITM Pune also developed a **Mobile App called “DAMINI”** to give alerts on impending lightning activity over the area.

Aurangabad Industrial City (AURIC) Project

- AURIC, India's **first Greenfield Industrial Smart City** along the Delhi-Mumbai Industrial Corridor (DMIC) is being developed by the Aurangabad Industrial Township (AIT) — a special purpose vehicle formed by DMIC Development Corporation and

Maharashtra Industrial Development Corporation.

- Domestic and foreign investors are expected to invest in projects from agriculture and food processing, automobile and engineering, textile, defence and aviation and electronics system design, manufacturing of electric vehicles, drones and aircraft for civil and defence aviation.
- The Government plans to develop **5 Industrial Corridors in the country namely:**
 - Delhi Mumbai Industrial Corridor (DMIC)
 - Chennai Bengaluru Industrial Corridor (CBIC)
 - Bengaluru Mumbai Economic Corridor (BMEC)
 - Amritsar Kolkata Industrial Corridor (AKIC)
 - East Coast Economic Corridor (ECEC)

Delhi - Mumbai Industrial Corridor (DMIC)

- DMIC aims to develop new industrial cities as "**Smart Cities**".
- The objective is to **expand India's Manufacturing & Services base** and develop DMIC as a "Global Manufacturing and Trading Hub".
- The programme envisages development of infrastructure linkages like power plants, assured water supply, high capacity transportation and logistics facilities as well as softer interventions like skill development programme for employment of the local populace.
- The programme will provide a major impetus to planned urbanization in India with manufacturing as the key driver.
- The programme has been conceptualized in **partnership and collaboration with Government of Japan.**

Maha Agritech launched in Maharashtra

- Maha Agritech, has been launched by Maharashtra govt. under which area under cultivation from sowing to harvesting, climate, and diseases on crops will be **monitored digitally using satellite and drone technology.**
- This will be the **first project** in the country under which farming will be digitally tracked.
- Remote sensing techniques have been used in India to provide basic information on crops, soils, water resources and the impact of drought and flood on agriculture.
- The main users of crop maps and yield forecasts are governments and agribusiness who use them to assess demand, anticipate prices and plan the use of resources.
- OTHER Programmes / Projects by Ministry of Agriculture and Farmers Welfare
 - Forecasting Agricultural output using Space, Agro-meteorology and Land based observations (FASAL)
 - National Agricultural Drought Assessment and Monitoring System (NADAMS)
 - KISAN (Crop Insurance using Space technology And geoinformatics)

- CHAMAN (Coordinated programme on Horticulture Assessment and Management using geo informatics)
 - Crop Intensification: Mapping and monitoring of post-kharif rice fallow lands using Satellite Remote Sensing and GIS technologies for Rabi Crop Area Expansion.
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