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State of World Population-2019: UNFPA

According to **State of World Population-2019 report** by the **United Nations Population Fund (UNFPA)**, India's population grew at an average of 1.2% annually between 2010 and 2019 which is **more than double the annual growth rate of China**.

- The release of report also **marks 50 years of the UNFPA being established** to support countries to **bring down fertility levels**.
- It also marks **25 years of International Conference on Population and Development (ICPD) in 1994**, where 179 governments agreed on a rights-based approach to sexual and reproductive health to address population growth.

Reproductive health can be defined as a state of well-being related to one's sexual and reproductive life. It implies, **"that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so"**.

Highlights

- The **world's population rose to 7.715 billion in 2019, up from 7.633 billion in 2018**, with the global average life expectancy of **72 years**.
- The **least developed countries** recorded the highest population growth, with countries in Africa registering an average of 2.7% a year.
- Much of the overall increase in global population till 2050 is projected to occur in high fertility countries, mostly in Africa, or in countries with large populations, such as Nigeria and India.
- **India's population grew at 1.2% a year** between 2010 and 2019, **marginally higher than the global average of 1.1%** a year in this period.
- Around half of India's population in 24 states have achieved the **replacement fertility rates of 2.1 children per women**, which is the desired family size when the population stops growing.

- However, the country's large youth population will continue to fuel population growth even as the size of the ageing population increases.
- **Replacement level rate** is the average number of children born per woman —**at which a population exactly replaces itself from one generation to the next, without migration.** This rate is roughly **2.1 children per woman** for most countries, although it may vary with mortality rates.
- In India, the **total fertility rate** per woman declined from 5.6 in 1969 to 3.7 in 1994 and **2.3 in 2019.**
- As of 2019, India's population stood at 1.36 billion, growing from 942.2 million in 1994 and 541.5 million in 1969.
- 27% of India's population was in the age bracket of 0-14 years and 10-24 years, while 67% of the country's population was in the 15-64 age bracket. **6% of the country's population was of the age 65 and above.**
- India registered an **improvement in life expectancy at birth.** The life expectancy at birth in 1969 was 47 years, growing to 60 years in 1994 and **69 years in 2019.**
- The findings on **women aged between 15-49 years** were published for **the first time as part of United Nations Population Fund's (UNFPA) State of World Population 2019 report.** It includes data on women's ability to make decisions over **three key areas:**
 - **Sexual intercourse with their partner,**
 - **Contraception use and**
 - **Health care.**
- According to the analysis, the absence of reproductive and sexual rights has major and negative repercussions on women's education, income and safety, leaving them "unable to shape their own futures".
- Early marriage continues to remain an obstacle to female empowerment and better reproductive rights.
- The report highlights the threat to women's and girls' reproductive rights posed by emergencies caused by conflict or climate disasters.

United Nations Population Fund

- UNFPA is the **United Nations sexual and reproductive health agency.** It was established as a trust fund in 1967 and began operations in 1969.
- In **1987, it was officially renamed the United Nations Population Fund.** However, the original abbreviation, UNFPA (United Nations Fund for Population Activities), was retained.
- The mandate of **UNFPA is established by the United Nations Economic and Social Council (ECOSOC).**
- UNFPA is a **subsidiary organ of the UN General Assembly.**
- UNFPA is **entirely supported by voluntary contributions** of donor governments, intergovernmental organizations, the private sector, and foundations and individuals,

NOT by the United Nations regular budget.

- UNFPA works directly to tackle **Sustainable Development Goal 3 on health, Goal 4 on education and Goal 5 on gender equality.**

First Images of A Black Hole

The scientists at **Event Horizon Telescope Project** have released the first-ever image of a **Black Hole** (more precisely, of its shadow).

- The black hole is located in the center of **galaxy Messier 87**, in the **constellation Virgo**. It is located about **53 million light -years away from earth.**
- The black hole has a mass of **6.5 billion Suns.**
- The image was made possible by the **Event horizon telescope (EHT).**
- The **EHT picks up the radiation emitted by particles** in the galaxy heated to billion degrees as they revolve around the black hole close to the speed of light.



What is a black hole?

- The term 'black hole' was coined in the mid-1960s by **American Physicist John Archibald Wheeler.**
- Black hole refers to a point in space where matter is so compressed as to **create a gravity field from which even light cannot escape.**
- Black-holes were **theorized by Albert Einstein in 1915.**

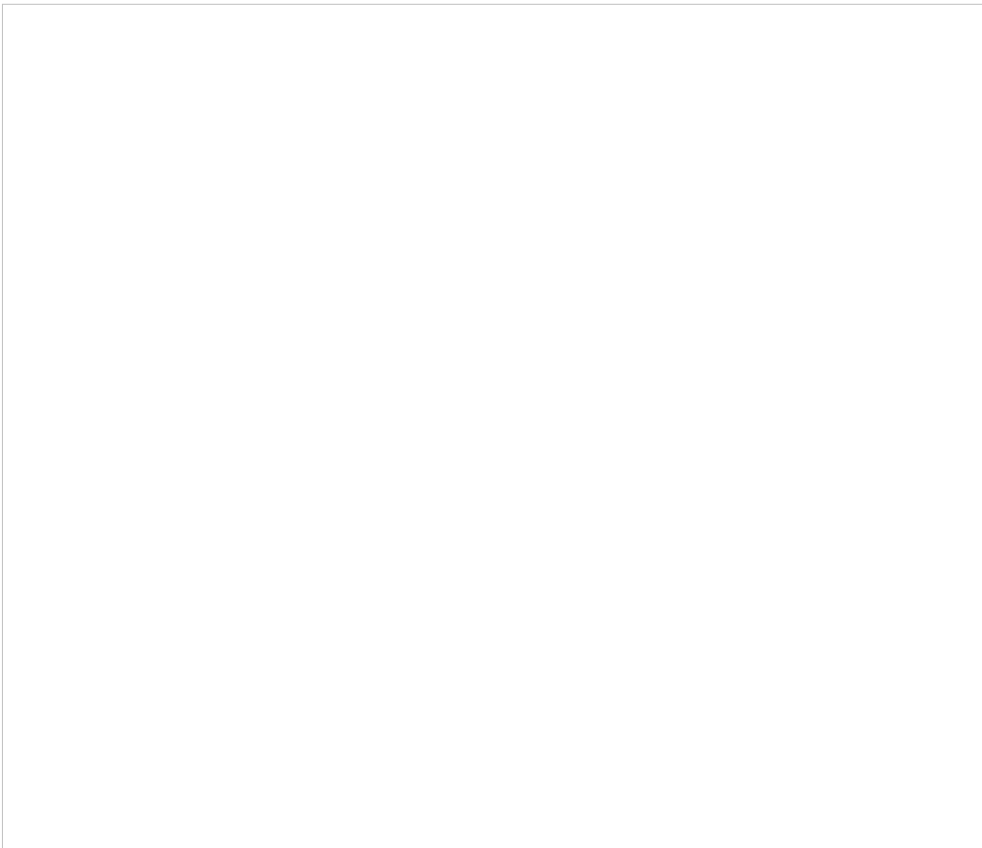


Event Horizon

There is a **region of space beyond the black hole called the event horizon**. This is a **"point of no return"**, beyond which it is **impossible to escape the gravitational effects of the black hole**.

Event Horizon Telescope Project

EHT is a group of **8 radio telescopes (used to detect radio waves from space)** located in different parts of the world.



Decline in Usable Groundwater

A team from the Indian Institute of Technology (IIT) Kharagpur, West Bengal and Athabasca University, Canada, has compiled the **first estimates of Usable Groundwater Storage (UGWS)** at the state-level across India using both in situ and satellite-based measurements.

- For the compilation, the groundwater-level data was used from 3,907 in situ monitoring wells across the country.
- The compilation includes total UGWS **estimation between the years 2005 and 2013**.
- Till now, the government agencies have been able to estimate the total groundwater, not the UGWS.
- **India is the largest user of groundwater in the world**. It uses an estimated 230 km³ of groundwater per year - over a quarter of the global total.

Key Findings

- More than **85 %** of the groundwater usage in India is linked with **irrigation abstraction practices**.
- The estimates show rapid depletion of usable groundwater storage during 2005-2013 in most of the **northern parts** of the country, which **lost 8.5 km³ / year** of the total groundwater, and the **eastern parts** which **lost 5 km³ /year** of the total groundwater.
- Rapid depletion of UGWS in Assam, Punjab, Haryana, Uttar Pradesh, Bihar, and West Bengal.
 - A northeastern state like **Assam** which has always been regarded as a water-affluent; **lost 2 %** of its usable groundwater resource and is at the brink of suffering drought and famine in impending years.
 - **Haryana**, which gets an annual precipitation of 689 mm, had the **highest level of usable groundwater with 3,593 cm** while **Himachal Pradesh** with a precipitation of 1,147 mm per year had the **lowest UGWS level of 520 cm**.
 - Some pockets in Uttar Pradesh also saw a dip in groundwater table.
 - In these areas, increase in agricultural production has been at the cost of non-renewable loss in the groundwater volume.
- Reasons cited
 - **Lack of an organised water supply** leads to increased dependence on groundwater.
 - Depletion in groundwater is positively linked with the increased cropping practice of **water intensive crops**.
 - **Overexploitation of the groundwater**: About 85 %of rural drinking water needs and 65 %of irrigation needs and 50 %of urban drinking water and industrial needs are fulfilled from the ground water.
- Consequences

- Rapid depletion in UGWS would accelerate the **decline in food production and availability of drinking water**, two of the prime goals under UN Sustainable Development Goals 2030. This would affect more than 120 million people in the Gangetic states.
- **Summer groundwater droughts** that some states are facing; would intensify in recent future years, will become severe to very severe by 2050, with the possibility of spreading over all the seasons.
- **Decline in the flow in the adjoining rivers**, including Ganga, thus also impacting river-aquifer interaction.
- Suggestions
 - In order to develop a sustainable groundwater management programme, it is important to **know the exact water-stress**.
 - India needs to develop a much **robust quantitative approach**, possibly with the help of advanced hydroscience and data science techniques to understand the conjunctive water demands and usages.
- The **southern and western Indian states** like Andhra Pradesh, Maharashtra, Gujarat, Chattisgarh have shown **replenishing usable groundwater storage trends**.

Important Facts For Prelims (11th April 2019)

Law for Banning Sale of e-cigarettes

- The Commerce Ministry has asked its Health Counterpart to frame a law for banning manufacture and sale of e-cigarettes in the country.
- Earlier, the Health Ministry had asked the Commerce Ministry to issue a notification banning import of Electronic Nicotine Delivery Systems (ENDS), including e-cigarettes and flavoured hookah.
- Without banning domestic sale and manufacturing of ENDS through a law, ban on its import will amount to the infringement of global trade norms.
- In August last year, the health ministry had issued an advisory to all states and Union Territories (UTs) to stop the manufacture, sale and import of ENDS.
- In March, the Central Drugs Standard Control Organization also directed all drug controllers in states and UTs to not to allow the manufacture, sale, import and advertisement of ENDS, including e-cigarettes and flavoured hookah, in their jurisdictions.

Electronic Nicotine Delivery Systems (ENDS)

- ENDS **heat a solution (e-liquid) to create an aerosol** which frequently contains flavourants, usually dissolved into Propylene Glycol or/and Glycerin.
- Electronic cigarettes, the most common prototype, are devices **that do not burn or**

use tobacco leaves but instead vaporise a solution so that a user can inhale. The main **constituents** of the solution, in addition to **nicotine**, are **propylene glycol**, with or without glycerol and **flavouring agents**.

- ENDS solutions and emissions also contain some other toxicant chemicals.

Global Financial Stability Report

- The Global Financial Stability Report (GFSR) is a **semiannual report by the International Monetary Fund (IMF)** that assesses the stability of global financial markets and emerging-market financing. It is **released twice per year, in April and October**.
- It draws out the financial ramifications of economic imbalances highlighted by the **IMF's World Economic Outlook**.
- In addition to **assessing the condition of worldwide markets**, the GFSR also issues **recommendations for central banks, policymakers and others who supervise global financial markets**.
- The April 2019 Global Financial Stability Report (GFSR) finds that despite significant variability over the past two quarters, financial conditions remain favourable.
- The latest GFSR **introduces a way to quantify vulnerabilities** in the financial system, encompassing **six sectors: corporates, households, governments, banks, insurance companies, and other financial institutions**.
- The report specifically focuses on corporate sector debt in advanced economies, the sovereign–financial sector nexus in the Euro area, China's financial imbalances, volatile portfolio flows to emerging markets, and downside risks to the housing market.

However, the short-term risks to global financial stability are still low by historical standards, though they are slightly higher than what was **highlighted in October 2018 Global Financial Stability Report**. In the medium term, however, risks remain elevated.

- It recommends action by policymakers, including through the clear communication of any changes in their monetary policy outlook, the deployment and expansion of macroprudential tools, the stepping up of measures to repair public and private sector balance sheets, and the strengthening of emerging market resilience to foreign portfolio outflows.

Cloud Honeypots

- According to a report by **Sophos (an IT security company)** "Exposed: Cyber attacks on Cloud Honeypots", over five million attacks were attempted on the global network of honeypots.
- Cybercriminals attempted attacks on a **Mumbai Cloud server honeypot more than 678,000 times in a month**, which was second to Ohio in the US that recorded more

than 950,000 login attempts.

- **What is a Honey Pot?**

- **Honeypots are decoy systems providing hosts that have no authorized users other than the honeypot administrators, as they serve no business function.**
 - A honeypot is a system **intended to mimic likely targets of cyberattackers** for security researchers to monitor cybercriminal behavior.
 - **Honeypots are used to trap attackers into thinking that they have penetrated a network**, allowing time for defenders to analyze their threat parameters and generate appropriate threat indicators to block an impending attack.
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