



## Solar waste

**Context:** India generated 100 kt of solar waste in FY 2022-2023, projected to increase to 600 kt by 2030.

### Solar Waste Projection:

- India's current installed solar capacity to generate 340 kt of waste by 2030, three times the present amount.
- Around 67% of this waste expected from five states: Rajasthan, Gujarat, Karnataka, Tamil Nadu, and Andhra Pradesh.
- These states plan extensive expansion of solar capacity, contributing to higher waste generation rates.

### Cumulative Waste Projection:

- Cumulative waste from existing and new capacity to reach about 600 kt by 2030.
- By 2050, waste expected to increase to about 19,000 kt, with 77% from new capacities.

### Composition of Solar Waste:

- Discarded modules contain critical minerals like silicon, copper, tellurium, and cadmium.
- 340 kt waste by 2030 to consist of 10 kt silicon, 12-18 tonnes silver, and 16 tonnes cadmium/tellurium.

### Recommendations for Waste Management:

- Maintain comprehensive database of installed solar capacity to estimate future waste.
- Incentivize recyclers and stakeholders to manage growing solar waste effectively.
- Focus on creating a market for solar recycling to address current and future waste challenges.

### Recycling Methods:

- Conventional recycling involves mechanical processes like crushing and sieving but can't recover valuable materials like silver and silicon.
- High-value recycling uses mechanical, chemical, and thermal processes to recover valuable materials like silver and silicon.

### Solar Waste Definition and Significance:

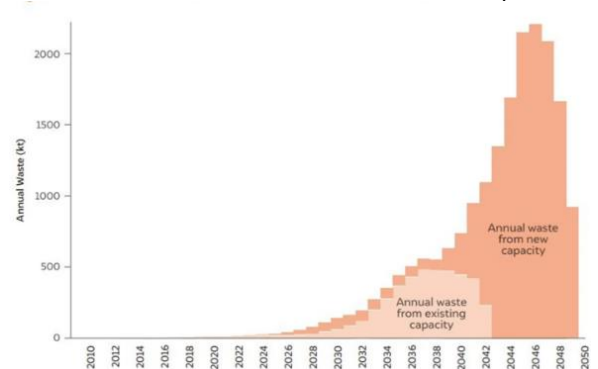
- Solar waste encompasses discarded components of solar PV systems, including panels and associated electronics.
- Proper disposal crucial for minimizing environmental impact and promoting sustainability.

### Components of Solar Waste:

- Solar Panels:** Typically last 25-30 years before becoming part of solar waste.
- Inverters:** Convert DC from panels into AC for household or grid use.
- Mounting Structures:** Support systems for solar panels.
- Cabling and Wiring:** Electrical components used in solar installations.

### Government Initiatives for Solar Waste Management:

- Extended Producer Responsibility (EPR):** MoEFCC introduced EPR regulations, making manufacturers responsible for product disposal.
- Draft Solar Waste Management Rules:** CPCB released draft rules outlining responsibilities for manufacturers, recyclers, and regulators.
- Research and Development:** Initiatives underway to find sustainable recycling solutions and recover valuable materials from decommissioned panels.



## Income inequality in India

**Context:** According to a paper released by the World Inequality Lab, India's top 1% income and wealth shares have reached record levels, ranking among the highest globally.

### Income and Wealth Distribution:

- According to the report, by 2022-23, the top 1% income share in India stood at 22.6%, while the wealth share was 40.1%, surpassing that of South Africa, Brazil, and the US.
- Wealth concentration is notably high, with the top 1% owning 39.5%, and significant portions owned by the top 0.1%, 0.01%, and 0.001%.
- The income disparity is stark, as the top 1% earns 23 times more than the average Indian, while the bottom 50% and middle 40% earn substantially less.

Table 3: Wealth inequality in India, 2022-23

Wealth Group	Adults	Wealth share (%)	Threshold (INR)	Average wealth (INR)	Ratio to average
Average	92,23,44,832	100.0	-4,10,00,000	13,49,029	1.0
Bottom 50%	46,11,72,416	6.4	-4,10,00,000	1,73,184	0.1
Middle 40%	36,89,37,933	28.6	4,31,138	9,63,560	0.7
Top 10%	9,22,34,483	65.0	21,98,344	87,70,132	6.5
Top 1%	92,23,448	40.1	81,60,022	5,41,41,525	40.1
incl. Top 0.1%	9,22,345	29.7	5,26,17,860	40,04,54,807	296.8
incl. Top 0.01%	92,234	22.2	36,86,80,160	2,99,67,73,491	2,221.4
incl. Top 0.001%	9,223	16.8	2,75,66,99,904	22,61,33,54,928	16,762.7

World Inequality Lab report

Table 2: Income inequality in India, 2022-23

Income Group	Adults	Income share (%)	Threshold (INR)	Average income (INR)	Ratio to average
Average	92,23,44,832	100.0	0	2,34,551	1.0
Bottom 50%	46,11,72,416	15.0	0	71,163	0.3
Middle 40%	36,89,37,933	27.3	1,05,413	165,273	0.7
Top 10%	9,22,34,483	57.7	2,90,848	13,52,985	5.8
Top 1%	92,23,448	22.6	20,73,846	53,00,549	22.6
incl. Top 0.1%	9,22,345	9.6	82,20,379	2,24,58,442	95.8
incl. Top 0.01%	92,234	4.3	3,46,06,044	10,18,14,669	434.1
incl. Top 0.001%	9,223	2.1	20,01,98,548	48,51,96,875	2,068.6

World Inequality Lab report

## Face to Face Centres



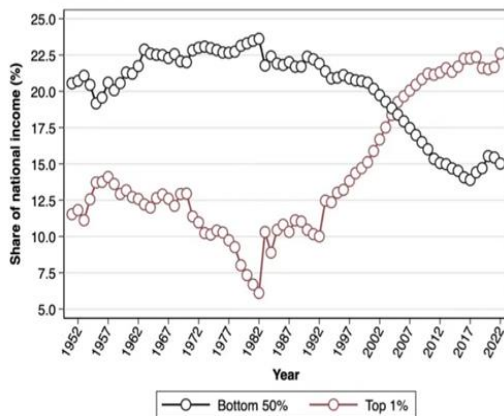


21 March, 2024

➤ **Trends and Analysis:**

- Historical trends indicate a decline in inequality post-independence until the early 1980s, followed by a sharp rise.
- Top-end inequality, particularly wealth concentration, has risen significantly since 2014-15, impacting the distribution of wealth among percentiles.
- The rise in top 10% shares has coincided with a decline in shares of the bottom 50% and middle 40%, indicating a widening gap.

Figure 6a: Bottom 50% vs Top 1% national income shares, 1951-2022



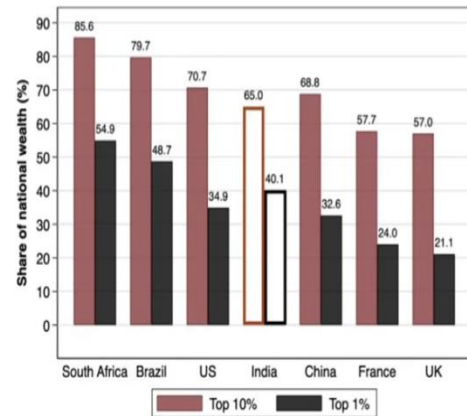
World Inequality Lab report

➤ **Policy Recommendations:**

- To address these disparities, the paper recommends restructuring the tax code to account for both income and wealth disparities.
- It also emphasizes the need for broad-based public investments in health, education, and nutrition to benefit the average Indian.

- A proposed 2% super tax on the net wealth of the 167 wealthiest families could create fiscal space for such investments.

Figure 15b: Top wealth shares in global perspective, 2022-23



➤ **Concerns and Challenges:**

- The report raises concerns about the regressive nature of India's income tax system concerning net wealth.
- There are also concerns about compromised institutional integrity, potentially leading to India's slide towards plutocracy.

➤ **Data Quality and Estimates:**

- The report acknowledges the poor quality of economic data in India, noting a recent decline, which suggests that the estimates may represent a lower bound of actual inequality levels.

## NEWS IN BETWEEN THE LINES

### BhashaNet Portal



Recently, the National Internet Exchange of India (NIXI) and the Ministry of Electronics and Information Technology (MeitY) are set to unveil the BhashaNet portal on Universal Acceptance (UA) Day, scheduled for March 21, 2024, at the Dr Ambedkar International Centre in New Delhi.

**About BhashaNet Portal:**

- The BhashaNet Portal is an **online platform**, aims to **promote digital inclusion by ensuring that individuals, regardless of language or script**, can fully participate in the digital world.
- This initiative demonstrates the joint commitment of NIXI and MeitY to advancing digital inclusion and promoting Universal Acceptance across the nation.
- **Theme - "BhashaNet: Impetus Towards Universal Acceptance"**: The theme highlights the portal's dedication to bridging linguistic divides and ensuring access to digital resources for all citizens.
- UA Day serves as a platform to mobilize stakeholders and raise awareness about the importance of Universal Acceptance readiness in today's digital landscape.
- This portal is expected to provide resources and tools to support digital content creation, localization and accessibility in multiple languages and scripts.
- By facilitating access to digital resources in diverse languages, **the portal has the potential to empower marginalized communities**, promote cultural diversity and enhance digital literacy nationwide.

### Face to Face Centres





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## Reverse Flipping



Recently, startups like Pine Labs, Zepto, and Meesho have expressed intentions to relocate their headquarters to India, yet Indian-origin companies planning to shift from the US or Singapore encounter significant tax burdens.

### About the Reverse Flipping:

- Reverse flipping involves relocating the domicile of an Indian company back to India after it had moved overseas, also known as 're-domiciling'.
- Flipping entails transforming an Indian **startup into a 100% subsidiary of a foreign entity**, involving the transfer of intellectual property (IP) and changes in ownership structure.
- It leads to **brain drain of entrepreneurial talent, value creation in foreign jurisdictions instead of India, and loss of intellectual property and tax revenue** for the country.
- It is increasingly observed among Indian startups, particularly in the fintech sector, as they prepare for IPOs and seek long-term benefits in the Indian market.

## Pebanista Yacuruna

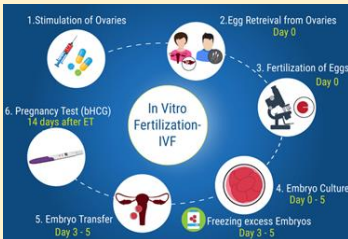


Recently, the researchers from the University of Zurich (UZH) unveiled the existence of the largest river dolphin species in Peru's Amazon Basin, dating back 16 million years,

### About Pebanista Yacuruna:

- Pebanista Yacuruna **belongs to the Platanistoidea group**.
- The name "Pebanista Yacuruna" is **derived from the Northern Quechua** word for a mythical aquatic creature believed to inhabit the Amazon basin.
- Its identity was **confirmed through the discovery of a fossilized skull**, indicating a **length of 3.5 meters**, making it the largest of its kind.
- It shares its closest living relatives with South Asian river dolphins, including the **Ganges river dolphin** and the **Indus river dolphin**.
- Notably, these dolphins exhibit shared features such as highly developed facial crests specialized for echolocation.
- Its ancestors were originally **marine mammals** that adapted to freshwater ecosystems in proto-Amerozia, thriving in the Pebas system of lakes and swamps.
- It is not closely related to the Iniidae family but shares affinities with the Platanista genus.
- Pebanista Yacuruna possessed highly developed echolocation abilities **crucial for navigation and prey detection**.

## In Vitro Fertilization



Recently, the Ministry of Health and Family Welfare has requested a report from the Punjab government regarding Charan Kaur's IVF treatment, mother of the late Punjabi singer Sidhu Moosewala, citing a potential violation of age limits under the Assisted Reproductive Technology (Regulation) Act, 2021.

### About In Vitro Fertilization:

- In Vitro Fertilization (IVF) is a **medical procedure** used to assist individuals or couples facing fertility challenges in achieving pregnancy.
- It is the most common and **effective type of ART** (Assisted Reproductive Technology), which encompasses various medical procedures aimed at addressing infertility.
- It entails extracting eggs from the ovaries, fertilizing them with sperm in a laboratory, and then transferring resulting embryos into the uterus to facilitate implantation and pregnancy.
- It can be **used to treat infertility arising from various factors such as blocked fallopian tubes, male factor infertility, ovulation disorders, genetic disorders and unexplained infertility**.
- It is one of several ART procedures, including intra-cytoplasmic sperm injection (ICSI), cryopreservation of gametes or embryos, and the use of fertility medication.
- Babies conceived through IVF are often colloquially referred to as "test tube babies."

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21 March, 2024

## Place in News

### Ireland

Recently, Leo Varadkar announced his resignation as Ireland's Prime Minister and leader of the Fine Gael party, citing "personal and political" reasons.

#### Ireland (Capital: Dublin)

**Location:** Ireland is an island nation in the North Atlantic Ocean, located in northwest Europe.

#### Boundaries:

- Ireland is bordered by the **Atlantic Ocean** (West), the **Irish Sea** (East) and the **Celtic Sea** (South).
- It shares its only **land border with Northern Ireland**, which is part of the United Kingdom, to the northeast.

#### Physical Features:

- The highest point in Ireland is **Carrauntoohil**, which is located in the Macgillycuddy's Reeks mountain range in County Kerry.
- The major rivers in Ireland include the **Shannon, Barrow, Suir, Blackwater** and **Nore**.
- Ireland has significant mineral resources including **zinc, lead, silver, gypsum** and **limestone**, with zinc and lead being the most economically important.



## POINTS TO PONDER

- Where did the 41st Steering Committee Meeting of the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) recently begin? – **New Delhi**
- Which country recently returned twenty-two historic artifacts to Japan, originally taken following the Battle of Okinawa during World War II? – **United States**
- Where did the first part of the 29th session of the Council of the International Seabed Authority (ISA) begin recently? – **Kingston, Jamaica**
- Which institution's researchers developed a method for treating bauxite residue (Red Mud) using phosphoric acid to extract valuable materials from it? - **IIT Madras**
- According to the Air Quality Report 2023 released by the Swiss organization IQAir, which region emerged as the world's most polluted metropolitan area? – **Begusarai, Bihar**

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