SOCIAL ISSUE-POVERTY

Issues with the minimum wage in India: Data on what Indians earn does have plenty to reveal of poverty

This article discusses how despite official reports, many Indian workers, especially casual ones, earn less than the minimum wage and poverty line, indicating that a significant number of Indians still live in poverty. It also highlights the issue of declining job quality and low wages in India.

The new Consumption Expenditure Survey (CES) has a different survey design, sparking debate on setting the right poverty line.It's unclear if this new CES accurately reflects poverty levels without a revised poverty line by experts.The **CES indirectly indicates poverty through wages of the poorest workers**.

How can poverty levels be estimated?

- Poverty levels can be estimated by looking at the wages of the poorest group of wage workers, a method used for initial poverty lines.
- The minimum wage for unskilled workers, crucial for this estimation, was ₹424 per day in 2023 and ₹449 in 2024.
- The Rangarajan poverty line for 2022-23 is set at ₹1,837 and ₹2,603 monthly per person for rural and urban areas, respectively.
- This method considers actual working days from the **Periodic Labour Force Survey**, suggesting a daily earning need of ₹390/₹552 in rural/urban areas to cross the poverty line.
- A family poverty line of ₹9,185 in rural and ₹13,015 in urban areas is assumed for a five-member family.

Issues with the minimum wage in India

- The government notified minimum wages are often lower than what is needed to meet the poverty line. For example, the 2024 minimum wage is ₹449 per day, below the ₹483 recommended by the labour ministry.
- According to the **India Employment Report 2024**, over half of casual workers didn't receive the minimum wages.
- Specifically, 76% of agricultural workers and 70% in construction earned below minimum wages.
- Additionally, 41% of regular workers earned less than the minimum wage.
- This situation points to a widespread issue of wages being insufficient to lift workers above the poverty line.

The data suggests that a **significant portion of Indians live in poverty, with low wages and poor job quality.**Even though poverty might have reduced since 2011-12, many workers, including those in better positions, still face meager earnings.This challenges claims of India eliminating extreme poverty, highlighting the reality of poorly paid workers and deteriorating job quality.

INFRASTRUCTURE- ENERGY

Challenges faced by local solar panel manufacturers: Solar manufacturing challenge

This article discusses how subsidies and import restrictions aimed at boosting local solar panel manufacturing may not be effective due to lower costs of imported panels and the commoditized nature of the product

challenges faced by local solar panel manufacturers

- **Competition from Low-Cost Imports:**Local manufacturers struggle to compete with cheaper solar panels imported from Southeast Asia. These imports are often more affordable even with tariffs applied. For instance, best-in-class modules from Southeast Asia are becoming "irresistibly cheap" for US developers.
- **Standardized Product Issue:** The solar industry produces highly standardized products. This makes it challenging for local manufacturers to offer something unique or superior. As Pol Lezcano of Bloomberg NEF notes, the solar industry's commoditized nature limits the competitive advantage of local production.
- **Global Manufacturer Dominance:** The sheer scale of production by global leaders like China's JinkoSolar overshadows local manufacturing. JinkoSolar alone shipped over 78

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gigawatts in 2023, with plans to increase to 100-110 gigawatts in 2024, surpassing demand in major markets outside China.

- **Economic Shifts:** Companies like Meyer Burger are moving operations from Europe to the US due to deteriorating business climates, demonstrating the challenging environment for local solar panel production in certain regions.

Efforts being made to boost local solar panel manufacturing

- **Subsidies and Incentives:** The article highlights that countries like the US and Europe are offering subsidies to encourage local solar panel manufacturing. These include financial incentives to make local production more viable against cheaper imports.
- **Import Disincentives:** Alongside subsidies, there are disincentives for importing solar panels. This approach includes imposing tariffs on imported solar products to make locally manufactured panels more competitive.
- **Strategic Company Movements:** An example is provided with Meyer Burger, a Swiss solar panel maker. Facing a challenging business environment in Europe, the company is refocusing on manufacturing in the US, influenced by the local manufacturing push there.

Status of methane control efforts

- Methane emissions, mainly from the energy sector and agriculture, are a significant concern.
- Global efforts are underway to monitor and reduce these emissions. For instance, over 50 oil and gas companies have committed to reducing their methane emissions by the end of the decade.
- Tools like the MethaneSAT satellite and initiatives like the International Methane Emissions Observatory are helping in tracking and managing methane emissions effectively.
- However, whether these efforts will lead to actual reductions in methane emissions remains uncertain.

PRELIM FACTS

1.Paira cropping system

- Odisha is promoting climate-resilient agriculture through its rice fallow initiative, capitalizing on residual moisture after rice harvest to cultivate short-duration pulses and oilseed crops.
- This initiative aims to boost land productivity, increase farmers' income, and ensure food security.
- The scheme, focuses on optimal resource utilization, increasing cropping intensity, and restoring soil health.
- Eight crops are being cultivated under the scheme, including green gram, black gram, Bengal gram, and mustard.
- Eco-friendly inputs such as bio-fertilizers, bio-pesticides, and integrated pest management techniques are being incorporated to promote natural pest control and reduce reliance on chemical pesticides.

2.Punnett square

- The Punnett square, named after British geneticist Reginald Punnett, is a grid used to predict the possible genetic outcomes of offspring when two individuals with known genotypes are crossed.
- It consists of a simple grid with squares representing possible combinations of traits inherited from each parent.
- This tool helps visualize the probabilities of different traits appearing in offspring and is commonly used in biology to understand inheritance patterns, such as dominant and recessive genes.
- Researchers utilize Punnett squares alongside Mendelian inheritance principles to study genetic traits in offspring, including those of animals and humans.

3.'Gravity hole' in the Indian Ocean

- Scientists from the Indian Institute of Science in Bengaluru, India, have proposed a credible explanation for the "gravity hole" in the Indian Ocean.
- Gravity Hole is where Earth's gravitational pull is weaker, leading to a sea level dip of over 328 feet (100 meters).

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- Using computer simulations dating back 140 million years, the researchers suggest that plumes of magma from deep within the planet, similar to those that create volcanoes, are responsible for the anomaly.
- These plumes, originating from the disappearance of an ancient ocean between the Indian plate and Asia, are believed to have brought low-density material closer to Earth's surface, shaping the "gravity hole."
- The "gravity hole" is a circular depression in the Indian Ocean that has a weaker gravitational pull than the rest of the planet.
- It's officially called the Indian Ocean geoid low and is the world's largest gravity anomaly.

4.S.A.R.A.H. – Smart AI Resource Assistant for Health

- The World Health Organization (WHO) has introduced S.A.R.A.H. (Smart AI Resource Assistant for Health), a digital health promoter prototype powered by generative artificial intelligence (AI), ahead of World Health Day.
- S.A.R.A.H. engages users in 8 languages on various health topics, providing information on healthy habits, mental health, and major health issues like cancer and heart disease.
- A.R.A.H. utilizes generative AI for accurate real-time responses and empathetic interactions, supported by Soul Machines Biological AI.
- Previous versions of S.A.R.A.H., known as Florence, were used during the COVID-19 pandemic to disseminate critical health messages.

5.PRATUSH

- Astronomers are keen on deploying telescopes on and around the moon to overcome challenges faced by instruments on Earth, such as atmospheric interference and radio noise.
- India's contribution, PRATUSH (Probing ReionizATion of the Universe using Signal from Hydrogen), is being developed by the Raman Research Institute (RRI) in collaboration with the Indian Space Research Organisation (ISRO).
- PRATUSH, or Probing ReionizATion of the Universe using Signal from Hydrogen, is a future radiometer planned for lunar orbit.
- It aims to uncover the Cosmic Dawn of the Universe, answering questions about the formation of the first stars, their nature, and the light they emitted.
- The project focuses on studying the Cosmic Dawn and Epoch of Reionization (EoR) using radiation from neutral hydrogen gas, which emits a signal at a 21-cm wavelength.
- This signal can provide insights into the early Universe's transition from neutral to ionized states.
- PRATUSH will carry instruments designed to detect this weak signal, operating over a frequency band of 30-250 MHz.
- Its observations will be free from ground-based interference, enabling more accurate measurements.

6.Agni-Prime Missile

The Strategic Forces Command (SFC) and the Defence Research and Development Organisation (DRDO) successfully tested the new generation ballistic missile Agni-Prime from Dr APJ Abdul Kalam Island off the coast of Odisha.

1. About-It is a medium-range, nuclear-capable surface-to-surface ballistic missile. It was tested for the first time in June 2021.

2. Developed by– Defence Research and Development Organisation (DRDO).

3. Range: The missile has a range capability between 1,000 and 2,000 km.

4. Features:

a. The missile is a two-stage canisterised solid propellant ballistic missile with dual redundant navigation and guidance system.

b. It is lighter than all the earlier Agni series of missiles.

Agni missiles

Agni missiles are long-range ballistic missiles designed for surface-to-surface attacks and capable of carrying nuclear payloads.First Variant-The first missile in the series, Agni-I, was developed as part of the Integrated Guided Missile Development Programme (IGMDP) and tested in 1989.

ANSWER WRITTING

Q. What is the status of digitalization in the Indian economy? Examine the problems faced in this regard and suggest improvements.

Digitalization in the Indian economy refers to the increased adoption of digital technologies to transform traditional economic activities, processes, competencies, and models, enhancing efficiency, productivity, and overall growth. In this regards government of India launched The Digital India program, aims to facilitate the delivery of government services through digital means and promote digital literacy and technology adoption across India.

Status of Digitalization in the Indian Economy

● Growing Digital Payments: UPI is a shining example, with platforms like BHIM, Google Pay, and PhonePe facilitating seamless and real-time money transfers. Recently, UPI monthly transaction volumes likely crossed historic 10-billion mark in August, 2023.

● Digital India Campaign: Launched in 2015, the Digital India initiative aspired to digitally empower citizens. For instance, with over 15 crore registered users and 60 million monthly active engagements, DigiLocker has made accessing and sharing documents easier.

● Aadhaar: As the world's largest biometric ID system, Aadhaar has over 1.3 billion enrolments. It not only ensures identity but also eases various services, such as Direct Benefit Transfer (DBT), ensuring subsidies directly reach beneficiaries' bank accounts, eliminating intermediaries.

● E-commerce: Giants like Amazon and Flipkart have garnered widespread popularity, with Big Billion Days sale by Flipkart and Great Indian Festival sale by Amazon generating sales worth billions in mere days, indicating their deep-rooted presence in the Indian market.

● Telemedicine: The pandemic made in-person medical consultations challenging, paving the way for platforms like Practo and DocOn, which witnessed a surge. By April 2020, Practo reported a 500% growth in teleconsultations, providing a lifeline to many amidst lockdowns.

● GSTN: The introduction of the GST Network simplified the indirect tax system, providing a unified platform for taxpayers. Over 1.2 crore businesses are registered under GSTN, making tax compliance more structured and transparent.

● Smart Cities Mission: Launched in 2015, the mission envisions 100 cities with advanced solutions. Pune's Smart City project, for instance, focuses on improved urban mobility and solid waste management using digital technology. Problems Faced

● Cybersecurity: The increasing reliance on digital platforms has elevated the risk of cyberattacks. In 2020, India faced the second-highest number of cyber-attacks in the AsiaPacific region, highlighting the pressing need for fortified cybersecurity measures.

● Privacy Concerns: Recent years have witnessed rising apprehensions regarding data privacy. The Pegasus spyware incident, where personal data of several Indian citizens were allegedly compromised, accentuated these concerns, pointing towards the vulnerabilities in the digital space.

● Dependence on Foreign Technologies: India's digital ecosystem heavily relies on foreign technologies. For instance, the dependency on American companies like Google and Facebook for digital services underscores the need for homegrown digital solutions.

● Regulatory Challenges: The fast-paced evolution of the digital landscape has resulted in regulatory hurdles. Recent issues with Twitter and the Indian government over regulatory compliance depict the complex dynamics of governing digital platforms.

● Digital divide: For Digital India to have a large-scale impact on citizens across the nation, the digital divide needs to be addressed through last-mile connectivity in remote rural areas, as currently, over 55,000 villages remain deprived of mobile connectivity

● Lack of infrastructure development: The biggest challenge faced by Digital India is slow/delayed infrastructure development. Spectrum availability in Indian metros is about a tenth of that in cities in developed countries, which has put a major roadblock in providing high-speed data services

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- Language Barrier: Despite the multilingual populace of India, the majority of digital content is in English, alienating non-English speakers. Developing content in various regional languages can be a pivotal step in overcoming this barrier.
- E-waste Management: The surge in digitalization has increased the generation of e-waste. In 2019, India generated approximately 3.2 million tonnes of e-waste, highlighting the urgent necessity for robust e-waste management strategies to mitigate environmental impacts. Suggestions for Improvements
- Digital Literacy Programs: With special focus on rural areas and older demographics can greatly help. Eg: the government could collaborate with popular platforms like WhatsApp or YouTube, which have significant outreach, to deliver digital tutorials in regional languages.
- Local Language Integration: By employing advanced Natural Language Processing (NLP) algorithms, digital interfaces can be transformed to understand and respond in multiple Indian languages, making them more user-friendly for a broader audience.
- Cybersecurity Measures: Establishing regional cybersecurity hubs that can focus on localized digital threats and provide real-time solutions is crucial. These hubs can also serve as training centers for cyber professionals.
- Inclusive Digitalization: Digital platforms should be developed with universal design principles in mind. For instance, voice-command features and screen reader-friendly designs can make platforms more accessible to visually impaired users.
- Skill Development: Collaborate with global tech firms to introduce skill training modules in schools and colleges. Companies like Microsoft and Cisco have already shown interest in skilling initiatives globally, and such partnerships can be fruitful for India's digital ambitions.
- Sustainable e-Waste Management: Introduce a digital token system where consumers earn rewards for responsibly disposing of e-waste. This can incentivize proper disposal and reduce the environmental hazards associated with electronic waste.
- Public-Private Partnerships: Emphasizing the collaboration between private tech giants and the government can lead to faster implementation of digital infrastructure and innovative solutions. Eg: the Indian Railways and Google partnership, which provided free Wi-Fi at railway stations.

Digitalization has indeed spurred growth and added a dynamic dimension to the Indian economy. However, it is imperative to address the existing challenges through innovative and inclusive strategies to harness the full potential of digitalization and steer the nation towards a digitally empowered economy.

MCQs

1. With reference to CAR-T cell therapy, consider the following statements:
   1. The CAR-T cell therapy involves engineering a patient's T-cells to attack cancer cells.
   2. CAR T cell therapies have mostly been successful against blood cancers but have limited efficacy against solid tumours.
   3. Cytokine release syndrome and neurological issues can occur after CAR T cell infusion.
   How many of the above statements is/are incorrect?
   a) Only one
   b) Only two
   c) All three
   d) None

2. Which of the following statements regarding Agni Prime is incorrect?

   a) It is a three-stage, surface-to-air theatre ballistic missile with a cryogenic propellant.
   b) It is the sixth variant of the Agni series missiles under the Integrated Guided Missile Development Program(IGMDP).
   c) It features a manoeuvrable re-entry vehicle (MaRV) for precise delivery of warheads.
   d) The project collaborates with the Strategic Forces Command and Defence Research and Development Organisation.

3. Consider the following statements regarding 'Shallow Fakes':
   1. Shallow fakes describe photorealistic and audio-realistic images and video and audio created or manipulated with artificial intelligence to deceive.
   2. 'Deepfakes', which are made with existing technologies, more often rely on

mids-captioning or mis-contextualising an existing image or video.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

4. Which of the following statements is/are correct?

1. Parliament has the exclusive legislative power to levy an excise duty on alcohol not fit for human consumption but meant for industrial use.

2. The neutral alcohol intended for industrial purposes is out of GST purview.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

5. What is the demographic dividend?

(a) The decrease in the total population of a country due to declining birth rates.

(b) The economic growth potential resulting from a favorable age distribution within a population.

(c) The increase in mortality rates among the elderly population.

(d) The phenomenon where the dependency ratio exceeds the working-age population.

6. When performing a genetic cross using a Punnett square, what do the letters inside the squares represent?

(a) Phenotypic traits

(b) Genotypic traits

(c) Dominant alleles

(d) Recessive alleles

7. Which of the following statements about the Indian Ocean Geoid Low is correct?

(a) It is caused by the gravitational attraction of the Himalayas.

(b) It is a gravity anomaly in the Indian Ocean.

(c) It is primarily influenced by ocean currents.

(d) It happens when two tropical cyclones get close enough to each other to create a shared center, forcing the two storms to whip around that common central point.

8. Consider the following statements regarding the PRATUSH, or Probing ReionizATion of the Universe using Signal from Hydrogen:

1. It is a future radiometer planned for lunar orbit.

2. It is being developed by the Raman Research Institute (RRI) in collaboration with the Indian Space Research Organisation (ISRO).

3. It aims to uncover the Cosmic Dawn of the Universe, answering questions about the formation of the first stars, their nature, and the light they emitted.

How many of the above statements are correct?

(a) Only One

(b) Only One

(c) All three

(d) None

9. What is the primary scale used to measure the magnitude of earthquakes?

(a) Richter Scale

(b) Fahrenheit Scale

(c) Celsius Scale

(d) Beaufort Scale

10. Which of the following statements about the Ring of Fire is correct?

(a) The Ring of Fire is a term used to describe a region of active volcanic and seismic activity encircling the Pacific Ocean.

(b) The Ring of Fire is a man-made structure built to protect coastal areas from tsunamis and earthquakes.

(c) The Ring of Fire refers to a fictional location in a popular fantasy novel series.

(d) The Ring of Fire is a meteorological phenomenon observed in the Arctic region.