

DAILY CURRENT AFFAIRS (16 August 2024)

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Digital platform driven by drone mapping to revive solar power scheme

GS Paper III: Environment, Science and Technology

Jacob Koshy
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With delays plaguing the ₹34,000-crore PM-KUSUM programme launched to boost solar energy infrastructure in agriculture, States have begun experimenting with alternative approaches to improve adoption. The Pradhan Mantri-Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) envisages setting up 100 GW of solar power plants in farmer-owned land, installing 14 lakh solar pumps, and solarising 35 lakh grid-connected agricultural pumps.

As of June, only 256 MW of power plants, 3.97 lakh solar pumps and 13,500 solarised pumps have been installed. The low uptake has forced the government to push the scheme's deadline to 2026.

A lot of challenges

A key hurdle is the unavailability of suitable land. Solar power in India has grown on the back of utility-scale power projects in Gujarat and Rajasthan where vast tracts of deserts and uncultivable land are suitable for setting up power plants.

With agricultural land, it is often a challenge to find



A key hurdle hindering the programme is the lack of suitable land. GETTY IMAGES

enough parcels of land that can be pooled together and made available to a power project developer,

said Saurabh Kumar, Vice President-India, Global Energy Alliance for People and Planet (GEAPP). The

latter is a collaboration of the IKEA Foundation, the Rockefeller Foundation and the Bezos Earth Fund,

and works on clean energy adoption and financing the transition away from fossil fuel in developing countries.

Drone technology

"We have been working with the Rajasthan government by developing a digital platform that uses drone technology to map land parcels. While this is information that is available to the government, often there is little institutional capacity to actually execute projects," said Mr. Kumar. "We connect with farmers and power developers."

"As of date, 12.3 MW has

already been installed in Rajasthan. The plan is to touch 100 MW in 2024," said Mr. Kumar. Plans are afoot to apply this approach in Maharashtra and Madhya Pradesh as well, he added.

The digital platform allows tracking the scheme's progress in real-time allowing for "prompt corrective actions and provides a level of oversight crucial for the successful deployment of large-scale solar projects, where delays and mismanagement can have significant repercussions," a GEAPP document noted.

Farmers willing to set up solar modules on their

lands are paid rent by the power project developer. "GEAPP looks to ensure that landowners receive fair compensation, with lease rates linked to prevailing market rates and adjusted for inflation. GEAPP's digital solutions and on-ground support have helped mitigate these issues, enabling Rajasthan to lead in achieving its renewable energy targets," according to the document. According to the Ministry for New and Renewable Energy (MNRE), of the 256 MW installed nationally, nearly 200 MW of solar capacity is situated in Rajasthan alone.

Digital platform driven by drone mapping to revive solar power scheme (16 August)

- The PM-KUSUM programme, a ₹34,000-crore initiative, was launched to boost solar energy in agriculture by setting up solar power plants, installing solar pumps, and solarising grid-connected agricultural pumps.
- The programme aims to establish 100 GW of solar power plants on farmer-owned land, install 14 lakh (1.4 million) solar pumps, and solarise 35 lakh (3.5 million) grid-connected agricultural pumps.
- As of June, progress has been slow, with only 256 MW of solar power plants, 3.97 lakh (397,000) solar pumps, and 13,500 solarised pumps installed.
- Due to these delays, the government extended the programme's deadline to 2026.
- A major challenge is the lack of suitable land for solar power plants. While utility-scale projects have thrived in places like Gujarat and Rajasthan with ample desert land, finding enough agricultural land for solar projects is difficult.
- Pooling together parcels of agricultural land to create a large enough area for solar projects is often a challenge, according to Saurabh Kumar, Vice President of GEAPP, an organization working on clean energy adoption and financing in developing countries.

Drone technology

- The GEAPP has partnered with the Rajasthan government to develop a digital platform using drone technology to map land parcels for solar projects.
- While the government has this land information, there's often a lack of capacity to execute projects effectively.

- The platform connects farmers with power developers to facilitate solar project development.
- So far, 12.3 MW of solar capacity has been installed in Rajasthan, with plans to reach 100 MW in 2024.
- This approach will also be applied in Maharashtra and Madhya Pradesh.
- The digital platform helps track the progress of the solar scheme in real-time, enabling prompt corrective actions and better oversight, which is crucial for large-scale projects.
- Farmers who set up solar modules on their land are paid rent by the power project developers.
- GEAPP ensures that farmers receive fair compensation, with lease rates linked to market rates and adjusted for inflation.
- Thanks to GEAPP's digital solutions and on-ground support, Rajasthan is leading in achieving its renewable energy targets.
- Of the 256 MW of solar capacity installed nationally under the programme, nearly 200 MW is in Rajasthan.

Death of discharged patient, lynching of healers highlight healthcare gaps in Gadchiroli (16 August)

- In Maharashtra's tribal areas, cases of witch-hunting have been linked to patients being "discharged on request" (DOR) from hospitals.
- Doctors and medical staff in Gadchiroli, an underdeveloped district, often have to discharge patients before treatment is completed due to patient or family requests.
- A three-year-old girl named Arohi Bandu Telami was discharged early from a hospital and later died. This incident led to the lynching of two traditional healers accused of using a voodoo doll to cast a lethal spell on her.
- Arohi had severe acute malnutrition and was in the hospital's pediatric intensive care unit and then the Nutrition Rehabilitation Centre before being discharged by her parents due to financial constraints.
- Discharging against medical advice is common among the tribal people in the area, and many patients leave the hospital without completing treatment.
- Hospital staff sometimes file missing person reports for patients who leave prematurely, but these cases rarely result in the patients being found or brought back for treatment.
- Many patients marked as DOR or missing are later treated by traditional healers. If the treatment fails, the healers are sometimes blamed and even killed by the community.

Falling back on healers

- Barsewada village, located near the Sundernagar Reserve Forest in Maharashtra, is home to about 130 Gond families, one of the tribal groups in Gadchiroli district.
- Arohi, a young girl from the Gond community, was taken out of the hospital by her parents and placed under the care of three local healers after falling ill.
- Arohi died on May 1, leading to outrage among the villagers who blamed two of the healers, Jamni Devaji Telami and Devu Katya Aatlami, for her death, accusing them of practicing black magic.
- The villagers allegedly burnt the two healers to death after a kangaroo court found them guilty. The third healer, Amit Madavi, managed to escape.
- A similar incident occurred in a nearby village where an elderly man, Donga Kokusi Joi, was tortured for allegedly using witchcraft to kill someone under his care.
- In response to these incidents, 16 residents of Barsewada were arrested and charged under the Maharashtra Prevention and Eradication of Human Sacrifice and Other Inhuman, Evil and Aghori Practices, and Black Magic Act, 2013.
- Compensation has been requested for the families of the victims by the Assistant Social Commissioner of Gadchiroli, Sachin Madavi.

Poor access to healthcare

- Officials and anti-superstition activists believe that when traditional healers fail to cure patients, they are often branded as witches, leading to violence or death. Family disputes and rivalry among healers (pujaris) also contribute to these incidents.
- In the case of Arohi's death, a report by the Social Welfare Department identified superstition and black magic as causes, omitting her malnutrition and severe anemia diagnosis.
- Arohi was initially treated at a rural hospital in Ettapalli but was referred to Aheri hospital due to the lack of a blood bank, as she needed blood transfusions.
- Access to tribal villages in Gadchiroli has improved compared to a decade ago when Naxals controlled the area, but healthcare facilities remain inadequate.
- The Maharashtra Andhashraddha Nirmoolan Samiti (MANS), an anti-superstition organization, conducts street plays and workshops to combat superstitious practices.
- Despite efforts by doctors and health workers to educate and treat villagers, a shortage of staff and poor healthcare facilities often hinder their work, leading to patients being discharged on request (DOR) and subsequent deaths.

Dengue control: the unrealised promise of Wolbachia-infected mosquitoes

Reducing mosquito-borne illnesses through proven interventions has an immense potential to reduce the burden on our health systems and productivity. We must resurrect and fund innovative vector control programmes across India to combat the Aedes-borne triple epidemic of dengue, chikungunya and Zika

Srinivas R. Mummadi
Vinod Scaria

GS Paper III: Basic Science

Dengue, a familiar threat in India, imposes a tremendous burden on the economy, estimated at around ₹28,300 crore in direct costs per year and 5.68 lakh years of young life lost annually. Existing vector control strategies, including insecticides and community education, have achieved only modest success. Clinical trials have yet to define the safety and efficacy of India's two dengue vaccine candidates and unearth effective antiviral agents. Given that a female Aedes mosquito transmits dengue, chikungunya, and Zika, biological vector control methods appear cost-effective, but mixed results limit their use.

Innovative vector control methods have been studied globally since 2009. This method employs a naturally occurring bacterium (Wolbachia) in fruit flies (*Drosophila melanogaster*) – many insect species in the wild host Wolbachia, but not the Aedes mosquito.

Wolbachia exhibits two facets of a symbiotic relationship (mutualism and parasitism) with the host insect. Scientists observed that Wolbachia provides resistance to viral infections in the fruit fly (mutualism) but can also impose a parasitic cost by shortening its life span and skewing insect populations toward a female majority. Resistance to viral infections could be due to direct competition between the virus and Wolbachia for the host cell's resources.

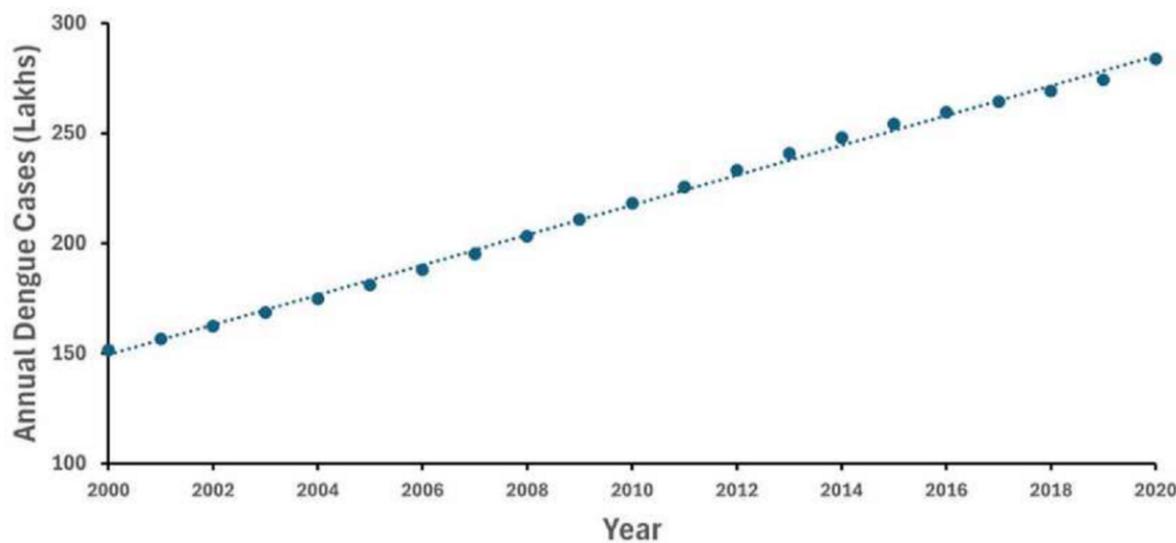
This observation laid the foundation for studying Wolbachia-infected mosquitoes at the University of Queensland. In 2009, McMeniman used the wMelPop strain to reduce the lifespan of Aedes by half. In 2011, Walker and Johnson successfully used the wMel strain to promote viral resistance without reducing the mosquito's life span. The near-normal life span of the wMel mosquito allowed for more mating opportunities, rapidly establishing the bacterium in the study's mosquitoes. It soon became a promising candidate for blocking dengue transmission. The stage was set for field trials and clinical studies, first in Australia and then across Oceania, Latin America, and Southeast Asia under the aegis of the World Mosquito Program.

Using wMel to combat dengue

Laboratory personnel mechanically transfer wMel to the cytoplasm, termed transinfection, and, after establishing successful lines, release them into urban areas. Countries have successfully used two strategies: population suppression and population replacement.

Singapore released infected male mosquitoes (males don't bite humans)

Annual Estimated Dengue Cases in India (Year 2000-2020, Lakhs)



New cases of dengue per year in India (Lakhs, 2000-2020). Source: Institute for Health Metrics and Evaluation, Data Visualization Tool of the Global Burden of Disease Project, Accessed July 28, 2024

into its communities, covering 35% of households. When these males mate with uninfected females, they produce non-viable eggs ("cytoplasmic instability"), drastically reducing the Aedes population by 90%. Singapore estimated that people in the release areas are 77% less likely to have dengue infection.

Australia pioneered the population replacement strategy, releasing infected mosquitoes over population centres over 1-6 months. Mating between infected males and females, or uninfected males and infected females, produced viable wMel carrying offspring. The wMel-Aedes mosquitoes soon became dominant in the wild, with no new releases needed since 2017. Studies performed seven years after the initial releases show a stable wMel genome – a pre-requisite for continued success. Since then, Australia has reported successful outcomes in dengue control, nearing dengue elimination.

In 2021, a multi-national effort resulted in a pathbreaking randomised controlled trial (RCT) in Indonesia. RCTs are considered the gold standard for testing interventions. In this trial, investigators released wMel mosquitoes in 12 geographic regions, with 12 similar no-release areas. At the end of 3 years, people living in the mosquito deployment areas were approximately 77% less likely to contract dengue and 86% less likely to need hospitalisation.

The long-term impact of wMel releases into the ecosystem is unknown. However, Wolbachia naturally occurs within 60% of insect species and doesn't infect humans



Scientists do not classify wMel transinfection as genetic engineering because the process does not involve integrating the bacterium's genome into the host's genome

and vertebrate animals. Importantly, Aedes mosquitoes are a recent import into non-African ecosystems initiated by the slave trade and, in the last 50 years, accelerated by the combination of global trade, travel, and rapid urbanisation. Scientists do not classify wMel transinfection as genetic engineering because the process does not involve integrating the bacterium's genome into the host's genome.

wMel Programs in India

India currently does not have an active wMel mosquito release programme. On July 5, 2022, the Indian Council of Medical Research – Vector Control Research Center (ICMR-VCRC) provided an update about developing two colonies of Puducherry wMel Aedes strains. The update mentioned successful studies since 2018 and pending government approvals. However, the ICMR-VCRC has not issued significant public updates since then. ICMR has recently reported that Wolbachia was found naturally in Aedes in NE India.

The magnitude of results in field trials

and the Indonesian trial highlight important implications for India. The wMel strategy could be highly cost-effective given its potential to reduce the burden of other emerging infections like Zika, Japanese encephalitis and chikungunya. wMel strategy also gains importance because we must rely on more than insecticides due to resistance, safety concerns and their limited effectiveness.

Ensuring appropriate public messaging about planned mosquito releases is essential. We can also learn valuable lessons from the experiences of mosquito releases in cities across 14 different countries. During the monsoon, the surge in similar febrile illnesses overwhelms our healthcare systems.

Reducing mosquito-borne illnesses through proven interventions has an immense potential to reduce the burden on our health systems and productivity. Exploring all possible interventions to ensure a healthy, productive young population and realising our demographic dividend is crucial. We must resurrect and fund innovative vector control programs across India to combat the Aedes-borne triple epidemic of dengue, chikungunya, and Zika.

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THE GIST

Vector control methods have been studied globally since 2009. This method employs the bacterium Wolbachia, which occurs naturally in fruit flies. Many insect species in the wild host Wolbachia, but not the Aedes mosquito

Infected male mosquitoes released by the Singapore authorities mated with uninfected females. They produced non-viable eggs, reducing Aedes population by 90%. Singapore estimates that people in release areas are 77% less likely to have dengue

The wMel strategy has potential in the Indian context because we must rely on more than insecticides due to resistance, safety concerns, and limited effectiveness

An obstinate refusal to focus on welfare (16 August)

- The Union Budget has faced criticism for not increasing spending on critical welfare schemes that support marginalized people in India.
- Despite government data showing that about 34% of the population survives on less than ₹100 a day, and over 81 crore people rely on free foodgrains, the budget allocations for key welfare schemes have been reduced.
- The current National Democratic Alliance (NDA) government continues the trend of reducing welfare allocations, as seen in the budget analysis.

- Two major welfare schemes, MGNREGA (which guarantees 100 days of employment to rural households) and the National Food Security Act (NFSA) (which provides free foodgrains to about two-thirds of the population), have seen their budget allocations decrease as a percentage of GDP since 2014-15.
- During the COVID-19 pandemic, these schemes were crucial in preventing a major disaster, but their funding has now been reduced again.
- The NFSA's expenditure as a percentage of GDP has decreased from 0.72% last year to 0.63% this year.
- The MGNREGA's budget allocation has also decreased from 0.29% of GDP last year to 0.26% this year.
- Overall, the combined budget allocation for these two schemes is 25% less than it was in 2014-15 when the NDA first came to power.
- Due to stagnating rural wages and the underfunding of MGNREGA, rural distress is increasing across the country.
- The Union Budget did not address the needs of vulnerable groups like widows, the elderly, and disabled individuals living below the poverty line.
- The National Social Assistance Programme, which provides financial support to these groups and families who have lost their main income earner, did not receive any increase in its budget allocation this year. The amount allocated is the same as last year in nominal terms.
- Since 2014-15, the programme's expenditure as a percentage of GDP has been reduced by half, dropping from 0.06% to 0.03%.
- The scheme provides very small pensions, offering only ₹200 a month to the elderly and ₹300 a month to widows. These amounts have not been increased since 2006, despite numerous requests from economists to raise them.
- If these vulnerable groups relied solely on this state support, they would be living at least 66% below the poverty line, which is set at ₹30 a day.
- The Women and Child Development Minister recently revealed that more than half of children under the age of five in India suffer from chronic malnutrition.
- Additionally, the rates of anaemia among Indian women and children are significantly higher than the global average, by 20% and 15%, respectively.
- The Saksham Anganwadi and Poshan 2.0 scheme was designed to combat child malnutrition and hunger. It combines the Anganwadi programme with the POSHAN Abhiyaan and a nutrition scheme for adolescent girls. However, even with these additions, the budget for the scheme has decreased by more than half since 2014-15, from 0.13% of GDP to 0.06% in the latest budget.
- The government also runs the mid-day meal (MDM) programme to address malnutrition and hunger among school-going children. This programme covers about 12 crore children across the country.
- Despite the MDM programme's success in improving class attendance, educational outcomes, and nutritional status, its budget as a share of GDP has been cut in half since 2014-15.
- In 2021, the Ministry of Finance rejected a proposal to introduce breakfast at school, citing a lack of funds, even though the concept had shown promising results in Tamil Nadu.
- There is a malnutrition crisis among children, making it crucial to expand nutrition programs and improve the quality of food provided to them.
- The share of GDP spent on primary and secondary education by the central government has decreased from 0.25% last year to 0.22% this year.
- Although primary education enrolment rates are high, there are still significant issues with education quality and infrastructure. The decline in education's share of GDP from 0.37% in 2014-15 to 0.22% today is concerning.
- The only positive note is a slight increase in the budget for health, with its share of GDP rising from 0.25% in 2014-15 to 0.28% this year.
- However, this increase is not enough in a country where high out-of-pocket health expenses push millions into poverty each year.
- Overall, the budget allocation for welfare, education, and health has dropped from 2.1% of GDP in 2014-15 to 1.53% this year.
- During the COVID-19 pandemic year of 2020-21, the budget allocation for these sectors was 4.31% of GDP, highlighting their importance during crises.
- The government has lost over ₹8 lakh crore in tax revenue since reducing corporate tax rates in 2019, limiting its fiscal capacity to support the poor and vulnerable.
- As a result, India's Human Development Index rank is low at 132, and inequality in the country is now worse than during British rule, according to the World Inequality Lab.
- For India to become a developed society, the government must focus on improving the lives of its poorest citizens. The previous UPA government introduced new welfare schemes and steadily increased their budget allocations, which could serve as a model for the current government.

Reshape the governance structures of AI companies

GS Paper III: S&T

The modern corporate governance regimes in capitalistic and neo-capitalistic economies have traditionally favoured the theory of **shareholder primacy**. This means that in modern corporations, the **objectives of profit generation and wealth creation for the shareholders and investors take primacy over other objectives of the business including the objective of public good**. In contrast, there have been proponents of a stakeholder benefit approach of corporate governance, which seeks to maximise the benefits of all stakeholders.

In recent years, corporations with ostensibly alternative governance models, leaning towards stakeholder capitalism have become more common. Corporations are increasingly getting involved in products, technologies and services that cannot be driven solely on the objectives of profit making and have a greater social objective. Generative Artificial Intelligence (AI) is one such instance, where corporations are seeking alternative governance structures to balance the objectives of generating profit with that of greater social responsibility.

Data access issues

The development of AI technologies requires access to data, which may, in turn, accelerate the ability to utilise personal information to **undermine privacy**. For instance, Meta was asked to pause its plans to train its large language models using public content shared on Facebook and Instagram in the European region over concerns raised by the Irish privacy regulator. In addition to this, it has been noted that **human prejudices may find their way into AI systems and lead to algorithmic biases with harmful results**.

Recently, **Amazon discontinued using a recruiting algorithm after it discovered that it was plagued with gender bias**. Moreover, researchers at Princeton University conducted an experiment where they used AI software to analyse and link words and found that European names were perceived as more pleasing than their African-American counterparts. These examples



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The issue is important as social objectives are often subsumed by broader profit-driven goals

demonstrate how AI can perpetuate existing biases and create inequality with respect to opportunities, and access. It is important for the creators of AI to act responsibly towards all stakeholders.

These considerations have prompted several companies to alter their corporate governance structures. To counter the risks posed by AI advancements, **OpenAI, and Anthropic**, have resorted to structures with public good and developing responsible AI as core objectives leading to creation of public benefit corporations. For instance, **Anthropic is governed by a structure called Long-Term Benefit Trust**. This trust is composed of **five financially disinterested members who have the authority to select and remove a portion of Anthropic's board**. Similarly, **OpenAI was incorporated as a non-profit, but it transitioned into a hybrid design by incorporating a capped profit-subsi-diary to support its capital intensive innovation**.

Purpose versus profits

While these companies started out with alternative models, **when there was a clash between the company's goals of purpose and its profit-generating machinery, the monetary interests won**. OpenAI, the creator of ChatGPT, found itself embroiled in a corporate governance debacle last year when the non-profit board of the company fired the CEO of the company, **Sam Altman**, due to concerns about the rapid commercialisation of AI products at the cost of **compromising user safety**. The dismissal was strongly criticised by Microsoft, OpenAI's largest investor, which was supported by about 90% of the employees, holding employee stock options in OpenAI.

Consequently, Mr. Altman was reinstated, and the existing board was replaced. This debacle has raised questions on the viability of public benefit corporate structures in the technological industry, which rely on capital infusion from shareholders and investors with deep pockets, to fund research and innovations. Recently, there

are rumours that OpenAI may be considering a move to a for-profit governance structure.

In 1970, Milton Friedman famously asserted that businesses have a social responsibility to generate profits for their shareholders. From these recent events, it is evident that even in this new age of public benefits corporation, the purported public benefit may be nothing more than disguised profit seeking. Pursuing social interest at the cost of financial considerations may not be feasible merely through adopting creative governance structures. Rather, these governance structures further reinforce the shareholder primacy, especially in tech companies where even the employees hold stock-based incentives.

Workable strategy

The present accountability structure is based on appointing an independent board and adopting a social benefit objective for the business. **These measures are not sufficiently strong to protect against this amoral drift, where the social objectives of a corporation are often subsumed by the broader profit-driven goals as the market enables unrestricted corporate control**.

Policymakers need to employ innovative methods of regulating corporations involved in developing AI-based products which balance these conflicting interests.

From a strictly economic perspective, this can be done by targeting three key areas: enhancing long-term profit gains of corporations from adopting a public benefit purpose; incentivising managerial compliance of such purposes, and reducing compliance costs of adopting such purposes. This would require framing ethical standards for the governance of AI product companies, along with providing adequate regulatory backing through reforms in corporate governance norms. With the increasing involvement of AI in multiple spheres of life, it is imminent that governance models promoting the ethical development of AI for generating profits need to be adopted.

Reshape the governance structures of AI companies (16 August)

- Modern corporate governance in capitalist economies typically focuses on maximizing profits and creating wealth for shareholders, often prioritizing these objectives over public good.
- Some believe in a different approach, called stakeholder benefit, which aims to maximize the benefits for all stakeholders, not just shareholders.
- Recently, more corporations have been adopting governance models that lean towards stakeholder capitalism, which balances profit-making with social responsibility.
- Generative AI is an example where companies are trying to balance profit with social responsibility.
- Developing AI technologies requires access to large amounts of data, which can raise privacy concerns, such as when Meta was asked to pause its AI training plans in Europe due to privacy issues.
- Additionally, there is a concern that human biases could be embedded in AI systems, leading to harmful algorithmic biases.
- Amazon stopped using a recruiting algorithm because it discovered the algorithm was biased against women.
- Researchers at Princeton University found that AI software showed bias by preferring European names over African-American names, demonstrating how AI can perpetuate existing biases and create inequality.
- These examples highlight the importance of AI creators acting responsibly towards all stakeholders.
- Due to these concerns, some companies have changed their corporate governance structures to focus on public good and responsible AI development.
- OpenAI and Anthropic are examples of companies that have adopted such structures.
- Anthropic uses a governance structure called the Long-Term Benefit Trust, which includes five financially independent members who have the power to make decisions about the company's board.
- OpenAI started as a non-profit but later became a hybrid organization by creating a subsidiary that allows for limited profits to fund its expensive innovation efforts.

Purpose versus profits

- When companies try to balance social purposes with profit-making, profit interests often dominate.
- OpenAI, the creator of ChatGPT, faced a major corporate governance issue when its non-profit board fired CEO Sam Altman over concerns about the rapid commercialization of AI, which might compromise user safety.

- Microsoft's strong opposition to Altman's dismissal, backed by about 90% of OpenAI employees (who hold stock options), led to Altman being reinstated and the board being replaced.
- This situation raised doubts about the effectiveness of public benefit corporate structures in the tech industry, where significant funding from investors is needed for research and innovation.
- There are rumors that OpenAI might shift to a for-profit governance model.
- Milton Friedman, in 1970, argued that a business's social responsibility is to generate profits for shareholders.
- These recent events suggest that even public benefit corporations may still prioritize profit over social good, reinforcing shareholder primacy, especially in tech companies where employees also have stock-based incentives.

Workable strategy

- The current accountability structure for companies involves appointing an independent board and adopting a social benefit objective, but these measures are often not strong enough.
- In many cases, social objectives get overshadowed by profit-driven goals, as the market allows companies to prioritize profits.
- Policymakers need to create innovative ways to regulate companies that develop AI products, ensuring a balance between profit and social responsibility.
- Economically, this can be achieved by focusing on three key areas:
 1. Increasing long-term profits for companies that adopt public benefit goals.
 2. Incentivizing managers to comply with these public benefit goals.
 3. Reducing the costs associated with complying with these goals.
- This requires establishing ethical standards for AI governance and supporting these standards with corporate governance reforms.
- As AI becomes more integrated into various aspects of life, it's crucial to adopt governance models that promote the ethical development of AI while still allowing for profit generation.

Question: Right to Privacy is protected as an intrinsic part of Right to Life and Personal Liberty. Which of the following in the Constitution of India correctly and appropriately imply the above statement? (UPSC 2018)

- (a) Article 14 and the provisions under the 42nd Amendment to the Constitution
- (b) Article 17 and the Directive Principles of State Policy in Part IV
- (c) Article 21 and the freedoms guaranteed in Part III
- (d) Article 24 and the provisions under the 44th Amendment to the Constitution

Freedom notes (16 August)

India must make its governments more accountable to the people

- Prime Minister Narendra Modi's 11th Independence Day speech, his first in his third term, aimed to show continuity and authority as he leads a coalition government.
- He spoke about the need for a uniform civil code, which he described as a secular measure, the idea of "one nation, one election," and the importance of increasing women's safety, referencing a recent tragic event in Kolkata.
- Modi also mentioned attempts to destabilize India's economy, referring to a recent report by Hindenburg Research accusing the head of SEBI (India's stock market regulator) of a conflict of interest.
- He criticized dynastic politics and suggested that one lakh (100,000) young first-generation leaders should enter politics at various levels.
- Modi reviewed his past two terms, claiming success in manufacturing and fighting corruption, and vowed to continue on the same path.
- While the ideas of a uniform civil code, more young leaders in politics, and fighting corruption are generally good, they remain contentious due to the government's partisan approach.
- Rahul Gandhi, Leader of the Opposition, was seated in a back row during the speech, which broke tradition. The government's explanation that front-row seats were given to members of the Olympic team was seen as unreasonable.
- The government needs to be more consultative and less unilateral if it wants to advance a unified national agenda.
- A uniform civil code in a diverse country like India requires consensus and should not be used opportunistically to target the Muslim community.
- Fighting corruption should involve investigating all leaders, not just those from the Opposition, and addressing serious charges against government functionaries like the SEBI chief.
- Criticism of the government should not be labeled as a conspiracy to destabilize the nation; this appeal is losing support.
- Independence Day should remind us that the nation is not synonymous with the government or the ruling party, and freedom involves holding the government accountable to the people

Choppy waters (16 August)

Trade outlook warrants timely decisions on export support schemes

- India's goods exports in July 2024 saw a decline of 1.5% compared to July 2023, reaching just under \$34 billion.
- This is the weakest export performance since November 2023 and the second worst since October 2022.

- While 18 of India's top 30 export items, like electronics (up 37.3%), garments (up 11.8%), and handicrafts (up 13.2%), showed growth, other key sectors pulled the overall export numbers down.
- Petroleum exports fell by 22.2%, gems and jewelry by 20.4%, chemicals by 12%, and food export restrictions continued to have a negative impact.
- India's import bill increased by 7.5%, driven by a 17.4% rise in petroleum imports and increased demand for electronics, pulses, and vegetable oils.
- Gold imports dropped by 10.7% in dollar terms but remained high, with imports between \$3 billion to \$3.4 billion since April 2024. Silver imports surged by almost 440% in July and are up 202% in the first four months of 2024-25.
- Due to declining exports and rising imports, the trade deficit grew by almost 24% to \$23.5 billion, marking a nine-month peak.
- The Commerce Ministry remains optimistic that India will surpass last year's record export tally, supported by strong services exports.
- However, challenges include geopolitical disruptions, rising freight costs, and declining commodity prices, especially with a slowing Chinese economy.
- The Centre is making efforts to explore new markets, but exporters need more certainty regarding official schemes that boost their competitiveness.
- The RoDTEP duty remission scheme has only been extended till September 30, and the interest subsidy scheme for large firms ended in June, while it will end this month for smaller firms.
- The government needs to quickly decide on continuing and possibly expanding these schemes so exporters can plan ahead without facing last-minute changes.

the House of Representatives (Shūgiin), and an upper house, the House of Councillors (Sangiin).

Patriotic IAS

Why did Japan's Prime Minister step down?

Since coming to office in October 2021, Kishida has struggled to overcome dire approval ratings. His party has been dogged by revelations of ties to the Korean-based Unification Church, as well as a political fundraising scandal uncovered last November

GS Paper II: IR

EXPLAINER

Craig Mark

In a surprise announcement, Japanese Prime Minister Fumio Kishida said on August 14 he would step down as leader of the ruling Liberal Democratic Party (LDP) next month, bringing his premiership to an early end.

Since coming to office in October 2021, Kishida has struggled to overcome dire approval ratings. The party has been dogged by revelations of ties to the Korean-based Unification Church in the wake of the assassination of former Prime Minister Shinzo Abe in July 2022, as well as a political fundraising scandal uncovered last November.

Kishida dissolved his own powerful faction in the party and pressured the largest conservative faction, formerly headed by Abe, to dissolve itself in the wake of the scandal. Up to 80 LDP members of the Diet (Japan's parliament) were implicated, and four cabinet ministers resigned. Public prosecutors investigating the scandal decided not to proceed with indictments against Kishida and seven other senior LDP figures, due to lack of evidence.

Just three months ago, Kishida vowed he would not step aside, instead pledging to push anti-corruption measures and other political reforms. To try to stem the damage, the LDP passed a bill in the Diet in June to reform the political funds control law, but the opposition called it inadequate.

The chief of the Maritime Self-Defence Force also resigned last month over allegations he mishandled national security information, making things even tougher for the Kishida government.

In a poll in late July, 74% of respondents said they did not want Kishida to stay on as party leader after the LDP leadership election in September. With his public unpopularity remaining entrenched, he was unlikely to receive the



Under pressure: Japanese PM Fumio Kishida addresses the press in Tokyo, on August 14. GETTY IMAGES

backing of a majority of LDP Diet members in next month's vote.

Widely considered a consistent foreign policy performer, Kishida had a series of strong diplomatic appearances in recent months. He attended NATO's 75th anniversary summit in Washington, followed by an official visit to Germany. He then returned to Tokyo to host the Pacific Island Leaders meeting last month. He had been due to embark on a tour of Central Asia last week, but cancelled the trip after a magnitude 7.1 earthquake struck Japan.

Rivals are already emerging
Kishida's rivals have already started to position themselves for next month's

leadership election – and to become Japan's new prime minister.

Shigeru Ishiba, a former defence minister and LDP secretary-general, regularly polls as the public's preferred candidate. He has already announced he will run, with the backing of Kishida's predecessor, Yoshihide Suga.

LDP Secretary-General Toshimitsu Motegi, who refused to dismantle his faction in the wake of the fundraising scandal, is also considered a potential contender. Digital Minister Taro Kono, one of Kishida's opponents in the 2021 leadership race, is another. Economic Security Minister Sanae Takaichi and Foreign Minister Yoko Kamikawa could also enter the contest. If either of them

won, Japan would have its first female prime minister.

Challenges remain

Whoever replaces Kishida in September will then have to restore the LDP's electoral fortunes before the next national election, due by October 2025. Key to this will be reinvigorating Japan's sluggish growth, which has shown the relative failure of Kishida's "New Capitalism" policy to revive the economy.

The weak yen has boosted export earnings and profits for some of Japan's largest corporations, in addition to helping the tourism industry exceed pre-pandemic levels. But higher-priced imports have further dampened consumption among ordinary Japanese, particularly those on fixed incomes and in irregular, low-paid, casual work. Japan's shrinking labour force also continues to exacerbate economic and social strains.

And just days ago, the decision by the Bank of Japan to raise interest rates to 0.25% triggered a wave of stock market volatility. The Nikkei index suffered its biggest drop since 1987, although it has largely recovered since then.

Despite Kishida's considerable efforts to boost Japan's alliances and a recent boost in defence spending, the country also faces an increasingly threatening security environment. This could become even more challenging if Donald Trump wins the U.S. presidency in November.

Despite the recent missteps and scandals, the LDP is still likely to return to power in the next election, given the ongoing weakness of the main opposition Constitutional Democratic Party.

The next prime minister could then decide to hold a snap election this year, taking advantage of a brief honeymoon period to exploit the disunity among the opposition parties. However, it will take a lot for any new leader to appeal to a Japanese public that is weary and jaded after years of political drama.

Craig Mark is Adjunct Lecturer, Faculty of Economics, Hosei University. This article was republished from *The Conversation*.

THE GIST

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▼ Despite Kishida's considerable efforts to boost Japan's alliances and a recent boost in defence spending, the country also faces an increasingly threatening security environment.

▼ Whoever replaces Kishida in September will then have to restore the LDP's electoral fortunes before the next national election, due by October 2025.

Why did Japan's Prime Minister step down? (16 August)

Since coming to office in October 2021, Kishida has struggled to overcome dire approval ratings. His party has been dogged by revelations of ties to the Korean-based Unification Church, as well as a political fundraising scandal uncovered last November

- Japanese Prime Minister Fumio Kishida announced he would step down as leader of the ruling Liberal Democratic Party (LDP) in September 2024.
- Kishida has faced low approval ratings since taking office in October 2021.
- The LDP has been involved in scandals, including ties to the Korean-based Unification Church and a political fundraising scandal.
- The scandals led to the resignation of four cabinet ministers, but Kishida and other senior LDP figures were not indicted due to a lack of evidence.
- Kishida previously vowed not to resign and promised political reforms, but his efforts were seen as insufficient by the opposition.
- The chief of the Maritime Self-Defence Force also resigned recently due to mishandling national security information, further weakening Kishida's position.
- A poll in July showed that 74% of respondents did not want Kishida to continue as party leader after the LDP leadership election in September.
- Kishida's unpopularity made it unlikely for him to receive enough support from LDP Diet members in the upcoming leadership vote.
- Despite his low approval ratings, Kishida has been recognized for strong foreign policy efforts, including attending NATO's summit, visiting Germany, and hosting the Pacific Island Leaders meeting.
- He canceled a planned trip to Central Asia due to a recent earthquake in Japan.
- Several rivals are emerging for the LDP leadership election, aiming to become Japan's next prime minister.
- Shigeru Ishiba, a former defense minister, is a popular candidate and has announced his intention to run with support from former Prime Minister Yoshihide Suga.

- LDP Secretary-General Toshimitsu Motegi, Digital Minister Taro Kono, Economic Security Minister Sanae Takaichi, and Foreign Minister Yoko Kamikawa are also potential contenders.
- If Sanae Takaichi or Yoko Kamikawa wins, Japan could have its first female prime minister.

Challenges remain

- The new LDP leader replacing Kishida in September will need to improve the party's standing before the national election due by October 2025.
- Reviving Japan's slow economic growth will be crucial, as Kishida's "New Capitalism" policy hasn't significantly boosted the economy.
- The weak yen has benefited large corporations and the tourism industry but has hurt ordinary Japanese people by raising import prices.
- Japan's shrinking labor force is causing additional economic and social challenges.
- The Bank of Japan recently raised interest rates to 0.25%, causing stock market volatility, though the market has mostly recovered.
- Despite efforts to strengthen alliances and increase defense spending, Japan faces security challenges that could worsen if Donald Trump wins the U.S. presidency.
- The LDP is still expected to win the next election, as the opposition party remains weak.
- The new prime minister might call for an early election this year to take advantage of the opposition's disunity, but it will be difficult to win over a public that is tired of political drama.

How can traffic which causes air pollution be controlled?

What is the share of road transport with respect to India's CO2 emissions? Why has the vehicular scrapping policy not been effective in States like Karnataka and Maharashtra?

GS Paper III: Pollution
Sreeparna Chattopadhyay

The story so far:

A recent report stated that India is home to 83 of the 100 most polluted cities in the world. Another report from the *British Medical Journal* estimated that air pollution led to the deaths of 2.1 million people in India, the second largest numbers after China. Over 99% of the population breathes air that is poorer than the recommended WHO standards.

How severe is air pollution?

The International Energy Associates estimates that 12% of India's CO2 emissions are due to road transport, of which the vast majority of Particulate Matter (PM) 2.5 emissions are due to heavy vehicles. PM2.5 comprises pollutants, which, by being microscopic can reach the deepest parts of our lungs, and spill over to blood, thereby causing a

range of respiratory and cardiovascular effects. Moreover, heavy vehicles contribute significantly to the emission of Nitrogen Oxide (NOx), capable of causing similar health effects. NOx contributes to the formation of ground-level ozone, worsening impacts on air quality and heat, which further fuels air pollution in urban contexts. Several studies have indicated that heavy vehicles contribute to about 60-70% of the total vehicular PM emissions and about 40-50% of the total NOx emissions in urban areas.

What are some of the measures taken to combat air pollution?

With the transport industry growing at 9.1% per annum, the Bureau of Energy Efficiency's (BEE) initiative in developing the draft Corporate Average Fuel Economy (CAFE) norms for cars in India is timely and laudable. The timelines to implement CAFE III from 2027-2032 and CAFE IV from 2032-2037 are practical. The commitment to shift from the

Modified India Driving Cycle (MIDC) to the World Light Duty Vehicle Testing Procedure (WLTP) from March 31, 2027, is excellent because the WLTP offers a more accurate and globally harmonised measure of a vehicle's actual fuel consumption and CO2 emissions. The proposed emissions target for CAFE III based on the WLTP at 91.7g CO2/km and for CAFE IV at 70g CO2/km is achievable. Such stringent CO2 targets are essential for driving innovation and encouraging the adoption of cleaner technologies. In the interest of the health of our planet and citizens, these targets should be made non-negotiable. However, the CAFE norms exclude emissions by heavy vehicles such as trucks, lorries, and other freight vehicles.

What more can be done?

The government introduced a vehicle scrapping policy to phase out old and polluting vehicles, including heavy vehicles in 2022. It mandates that

passenger vehicles older than 20 years and commercial vehicles older than 15 years must pass a "fitness and emissions test". If vehicles fail the mandatory tests, they are categorised as end-of-life vehicles, and will lose their registration certificate, and are recommended to be scrapped. Yet this policy is yet to take off in Karnataka for two reasons: there are only two scrapyards for the entire State and it is voluntary. Most older vehicles in Bangalore are not four-wheelers but older BRTC buses, private vans, and heavy vehicles. Maharashtra is one among 21 States that have announced incentives such as discounts on road tax or on a new private vehicle purchase to encourage scrapping but this is yet to have far-reaching impacts on air pollution in the State. Policymakers must ensure that the guidelines do not remain exemplary in the letter alone.

Existing policies of the government to combat air pollution such as the testing of vehicles at regular intervals to ensure they are within emission limits, banning open garbage burning, and checking industrial emissions need to be implemented with the greatest stringency. While we welcome the government's efforts to curb air pollution, we also strongly suggest that mass transit is the only sustainable method of tackling air pollution in India.

Lancelot Mark Pinto is a pulmonologist at P. D. Hinduja Hospital, Mumbai and a public health policy advocate. Sreeparna Chattopadhyay is with TAPMI, Manipal Bangalore and is a medical anthropologist.

THE GIST

▼ The International Energy Associates estimates that 12% of India's CO2 emissions are due to road transport, of which the vast majority of Particulate Matter (PM) 2.5 emissions are due to heavy vehicles.

▼ With the transport industry growing at 9.1% per annum, the Bureau of Energy Efficiency's (BEE) initiative in developing the draft Corporate Average Fuel Economy (CAFE) norms for cars in India is timely and laudable.

▼ The government introduced a vehicle scrapping policy to phase out old and polluting vehicles, including heavy vehicles in 2022. It mandates that passenger vehicles older than 20 years and commercial vehicles older than 15 years must pass a "fitness and emissions test".

How can traffic which causes air pollution be controlled? (16 August)

What is the share of road transport with respect to India's CO2 emissions? Why has the vehicular scrapping policy not been elective in States like Karnataka and Maharashtra?

- A recent report found that 83 of the world's 100 most polluted cities are in India.
- Another report estimated that air pollution caused 2.1 million deaths in India, the second-highest after China.
- Over 99% of India's population breathes air that is below the WHO's recommended standards.
- Air pollution is severe in India, with 12% of the country's CO2 emissions coming from road transport, especially heavy vehicles.
- Heavy vehicles are a major source of harmful PM2.5 emissions, which can cause serious health issues by penetrating deep into the lungs and bloodstream.
- Heavy vehicles also emit a significant amount of Nitrogen Oxide (NOx), contributing to poor air quality and health problems.
- Heavy vehicles are responsible for 60-70% of total vehicular PM emissions and 40-50% of NOx emissions in urban areas.
- To combat air pollution, India has introduced Corporate Average Fuel Economy (CAFE) norms for cars, aiming to reduce CO2 emissions.

- CAFE III and IV will be implemented between 2027-2037, with more accurate testing methods and stricter CO2 targets.
- These targets are necessary for innovation and cleaner technologies, but the CAFE norms currently exclude heavy vehicles like trucks and lorries.

What more can be done?

- The government introduced a vehicle scrappage policy in 2022 to phase out old and polluting vehicles, including heavy vehicles.
- The policy requires passenger vehicles older than 20 years and commercial vehicles older than 15 years to pass a fitness and emissions test.
- Vehicles that fail the test are considered end-of-life vehicles, lose their registration, and are recommended for scrapping.
- The policy has not been successful in Karnataka due to the limited number of scrapyards (only two) and because participation is voluntary.
- In Bangalore, many older vehicles are BMTc buses, private vans, and heavy vehicles, not just four-wheelers.
- Maharashtra is one of 21 states offering incentives like road tax discounts or discounts on new vehicle purchases to encourage scrapping, but these measures have not yet significantly reduced air pollution.
- Policymakers need to ensure that the guidelines are strictly enforced, not just written down.
- Existing policies like regular vehicle emission tests, banning open garbage burning, and monitoring industrial emissions need to be implemented with strictness.
- While the government's efforts to reduce air pollution are appreciated, mass transit is emphasized as the only sustainable way to address air pollution in India.

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MAINS PRACTICE QUESTION

GS Paper III: Environment

Question: Given the current scenario of air pollution in India, how can mass transit systems contribute to a sustainable solution? (150 Words/10 Marks)

ANSWER APPROACH:

- Introduce your answer by highlighting the alarming air pollution levels in India and the role of mass transit systems as a sustainable solution to reduce vehicular emissions.
- Then discuss how mass transit, like buses and metro rail, can mitigate CO2 emissions by decreasing individual vehicle usage.
- Further, emphasize the significance of urban development that integrates transit systems and reduces urban sprawl, promoting walkability. Also, address the importance of public awareness campaigns in encouraging the use of public transport over private vehicles.
- Finally, conclude with mentioning the integration of clean technologies and the necessity to overcome challenges such as funding and public acceptance for effective implementation.

ANSWER:

The current scenario of air pollution in India is alarming, with numerous cities consistently ranking among the most polluted in the world. In the face of this environmental crisis, mass transit systems present a sustainable solution that can help reduce vehicular emissions and improve air quality.

Reduction of Vehicle Emissions:

- Mass transit systems, such as buses, metro rail, and trams, can significantly decrease the number of individual vehicles on the roads.
- According to estimates, the transport sector contributes about 12% to India's CO2 emissions, with heavy vehicles being a significant part of this problem.
- By providing a reliable alternative for daily commuters, mass transit systems can help mitigate emissions from private vehicles, thereby reducing the overall pollution levels.
- For instance, the introduction of dedicated bus rapid transit systems (BRT) and metro rail services in major cities has already seen a reduction in journey times and vehicular congestion.
- The successful implementation of these systems in cities like Delhi and Mumbai serves as an example of how efficient public transit can lead to cleaner air.

Encouraging Sustainable Urban Development:

- Mass transit systems play a pivotal role in urban planning and development.
- The creation of integrated transit networks encourages the development of higher-density housing and mixed-use developments around transit stations.
- This type of planning reduces urban sprawl and promotes walkability, further decreasing reliance on private vehicles.

Improved Public Awareness and Behavioral Change:

- Investing in mass transit also offers an opportunity to raise public awareness about the importance of sustainable transportation.
- Campaigns promoting the benefits of public transport over private car use can foster a cultural shift towards embracing public transit options.
- By making mass transit a convenient and appealing choice, cities can encourage more people to use public transportation, thereby contributing to cleaner air.

Technological Innovations:

- The integration of clean technologies within mass transit systems is critical.
- Transitioning to electric or hybrid buses significantly reduces emissions compared to conventional diesel-powered vehicles. Government initiatives, such as the Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme, support the deployment of electric vehicles (EVs) in public transport to further minimize pollution.
- The Bureau of Energy Efficiency is also working on improving efficiency standards for public transportation, making the systems more environmentally friendly.

Challenges and Solutions:

- Despite these benefits, mass transit systems face challenges including funding, infrastructure development, and public acceptance.
- To ensure effective implementation, government policies should focus on enhancing connectivity, subsidizing fares for vulnerable populations, and ensuring the safety and reliability of transit systems.

Thus, mass transit systems offer a sustainable solution to combat the pressing issue of air pollution in India. By reducing the reliance on private vehicles, promoting efficient urban development, and investing in clean technologies, these systems can play a critical role in improving air quality and public health. As India continues to grapple with its air pollution crisis, prioritizing and enhancing mass transit infrastructure will be essential in realizing long-term environmental benefits.

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