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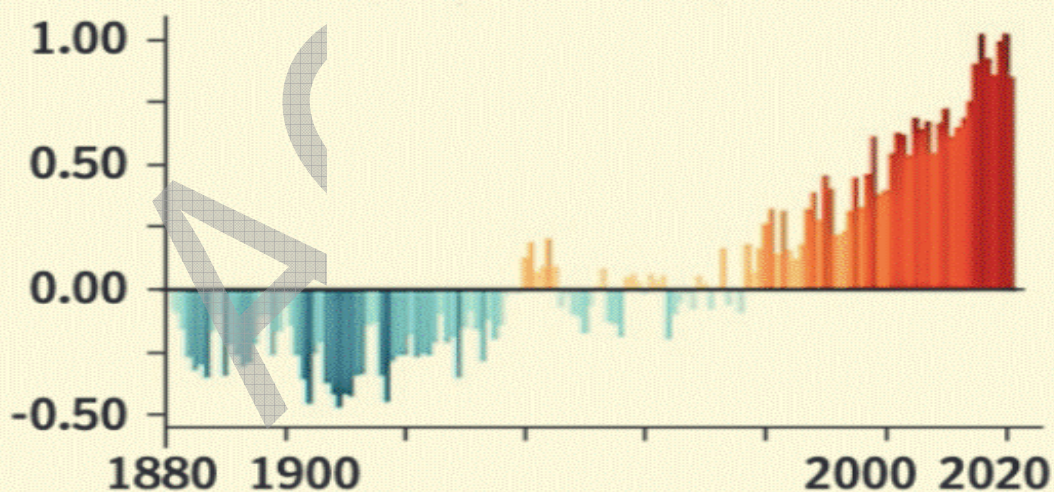
Editorial

11 May 2022

In rising heat, the cry of the wilting outdoor worker

OUR HEATED HISTORY

From 2015 onwards, we are experiencing the warmest years on modern record, with 2021 joining 2016, 2019 and 2020 as the hottest years ever



Data Courtesy: NASA Earth Observatory

Introduction:

More asphalt-melting heatwaves driven by runaway climate change are on the way.

The consequences for health and livelihoods are catastrophic, as a third of South Asia's population depends on outdoor work.

To get to grips with this predicament, India must initiate safety nets – a combination of targeted transfers and insurance schemes **to improve the resilience of outdoor workers.**

Transfers are best linked to the beneficiaries' own efforts to build resilience, for example, adapting agricultural practices to the uptick in heatwaves.

Disaster insurance schemes, far too few in India, should enable workers to transfer some of the losses from debilitating heat to public and private insurance providers.

A hotter future in South Asia:

1. The **intensity and frequency of heatwaves** have soared in South Asia and they are set to worsen in the years ahead.
2. **Extreme heat conditions** have hit swathes of India, not only in the northern States of Rajasthan, Uttar Pradesh, Gujarat, and New Delhi, but now increasingly also in the south.
3. Delhi this month suffered its second warmest April in 72 years, temperatures averaging 40.2°C, and Gurgaon in neighboring Haryana crossed 45°C for the first time.
4. **Labour-intensive agriculture and construction** have become near impossible during afternoons.
5. Over the last 100 years, global temperatures have risen by 1.5°C and, at the current rate, could reach 4°C by 2100 – an unthinkable scenario. So far in the year, **2022 has been the fifth-warmest year on record.**
6. The prevalence of extreme temperatures around the world suggests that India's warming is the result not only of local factors but also global warming.
7. In fact, scientists have made clear how greenhouse gas (GHG) emissions exacerbate temperatures in the oceans, leading to soaring temperatures.
8. The culprit in the current plight from intense weather is not Mother Nature but anthropogenic GHG emissions.
9. Crucially, **heatwaves and wildfires are 'unimaginable'** without human-caused climate change, according to a study done by World Weather Attribution in July 2021.

High economic losses due to Heat waves and Reversing climate change:

The impacts are dire across the world. **Heat waves** are proving to be Europe's deadliest climate disaster.

1. India faces the largest heat exposure impacts in South Asia. One study finds that 1,41,308 lives were claimed by acute weather in India during 1971-2019, of which the loss of 17,362 lives was due to unrelenting heat, with mortality rates rising by two-thirds during the time period.
2. Worldwide economic losses, by one estimate, could reach U.S.\$1.6 trillion (• 1.6 lakh crore) annually if global warming exceeds 2°C.
3. India, China, Pakistan, and Indonesia, where large numbers of people work outdoors, are among the most vulnerable.
4. India's outdoor workers, reeling under daily temperatures more than 40°C, are on the frontlines of the climate catastrophe.
5. The **well-being of outdoor workers** will be fundamentally determined by the ability to keep the temperature rise to well below 2°C.
6. **Reversing climate change** is predicated on leading emitters, including India, moving away from carbon-emitting fossil fuels, and replacing them with cleaner, renewable fuels.
7. But such climate mitigation in India and elsewhere is painfully slow, because of a lack of political will in the major emitting countries for decisive action.

Adaptation is essential:

1. In the meantime, hotter temperatures are making outdoor work unbearable, in addition to other dire consequences.
2. **Climate mitigation or de-carbonisation of economies** on the part especially of the big emitters, such as the United States, the European Union, China, and India remains an imperative.
3. But **temperatures are set to rise** regardless of mitigation, based on the emission damage already done.
4. That means climate adaptation, or coping with the predicament, is as big a priority as mitigation.
5. A crucial aspect of adaptation is **better environmental care** that can contribute to cooling.
6. Heatwaves are rooted in degraded land and relentless deforestation, which exacerbate wildfires.
7. **Agriculture, being water-intensive**, does not do well in heat wave-prone areas.

8. A solution is to **promote better agricultural practices** which are not water-intensive, and to support afforestation that has a salutary effect on warming.

Health Ministry asks health facilities to be ready for soaring temperatures:

1. **Health facilities need to increase resilience to extreme heat** by arranging uninterrupted electricity for constant functioning of cooling appliances, installation of solar panels (wherever feasible), measures to reduce indoor heat through cool/green roofs, window shades, shade outside, etc.
2. The Ministry has written to all stakeholders advising that health facilities' preparedness must be reviewed for availability of adequate quantities of essential medicines, I.V. fluids, ice packs, ORS (oral rehydration solution), and all necessary equipment.
3. **Availability of sufficient drinking water** at all health facilities and continued functioning of cooling appliances in critical areas must be ensured.
4. It added that **rainwater harvesting and recycling plants** may also be explored for self-sufficiency in water.
5. Temperatures have already touched 46 degree Celsius at some places, and deviation up to six degrees Celsius from expected normal temperatures has also been reported.

Collaboration for insurance against natural hazards:

1. Insurance schemes can help transfer some of the risks of severe heat faced by industrial, construction and agricultural workers to insurers.
2. Insurance against natural hazards is minimal not only in India but also Asia where less than 10% of the losses are typically covered.
3. Government and insurers need to collaborate in providing greater coverage of losses from extreme weather events, including for calamities from brutal heat.
4. For greater effectiveness, transfers and insurance payments can be tied to **investments in resilience made at the local levels**, such as restoring the urban environment that has a cooling effect.

1. Delhi's Aravali Biodiversity Park is a stand-out example that transformed a barren landscape into forest communities **protecting greenery and biodiversity**.
5. Transfers could also be linked with mapping of the incidence of heatwaves across locations.
6. The most severely affected areas are also likely to be the most poverty-prone and **need stronger insurance packages**, including guarantees for crop losses.
7. Incentive schemes could also be tailored to annual changes in the intensity of the hazard.

Way Ahead steps:

1. India offers a range of food and fuel subsidies, but most of them are poorly targeted.
 1. For example, kerosene subsidies provide modest financial benefit to disadvantaged rural households, with only 26% of the subsidy value estimated to reach the poor directly.
2. As the efficiency and the equity of existing subsidies are re-examined, the provision of transfers and insurance linked to **building climate resilience should become a priority**.
3. The projections of the IMD can guide future scenarios, which the Central government can use to develop subsidies and insurance schemes linked to State and district-level actions for **building resilience to climate change**.
4. Insurance schemes require public and private sectors to jointly set out risk-sharing mechanisms that outdoor workers can avail of.
5. **Targeted transfers and insurance schemes** can cushion financial hardships, for example, **by improving crop resilience to heatwaves**.
6. Making them part of the Government's economic programmes is one way to make these safety net policies sustainable and hard to reverse, as international experience with cash transfer programmes shows.

Conclusion:

Response to the current plight of outdoor workers **can be linked to climate adaptation**.

Financial transfers can be targeted to help farmers plant trees and buy equipment better suited for the extreme weather.

For example, support for drip irrigation can reduce heavy water usage.

Averting slash and burn agriculture and stubble burning is not only key to cutting air pollution but also **cooling temperatures**.

Urban green such as street trees, urban forests and green roofs can help cool urban areas.

Workers in cities and villages can benefit from early warning systems and **better preparedness as well as community outreach programmes** during an episode.

India's Universities: A Rough Ride

Education has long been touted to play a key role in **reducing socio-economic inequalities**. Multiple studies, both in India and abroad, have reaffirmed the belief that **higher education leads to better financial outcomes**.

Following this, the Government of India launched several initiatives for the upliftment of Indian universities, such as the **Institutions of Eminence (IoE) Scheme** (for setting up/ upgrading 20 Institutions as world-class teaching and research institutions), the **IMPRINT** initiative (for developing a roadmap for research to solve major engineering and technology challenges) and the **National Education Policy, 2020**.

Despite such efforts, India's once-great institutions of learning are beset by multiple crises - a **financial crunch** at the university level, a **deficit in research opportunities** for faculty, **poor infrastructure** and learning outcomes for students.

Where do Indian Universities Stand at the Global Level?

- The **Times Higher Education (THE)** in September 2021 released its **World University Rankings 2022** edition which found that overall, **India is home to 35 of the world's top 1,000 universities**, its second-highest total ever in the rankings.
 - Out of those 35, **Indian Institute of Science (IISc)** was the top performer followed by **IIT Ropar** and **JSS Academy of Higher Education and Research**.
- Earlier in July 2021, the **QS World University Rankings 2022** showed that overall, there were **22 Indian institutions in the top 1,000 list** compared to 21 in the 2021 Rankings, with the **IITs in Guwahati, Kanpur, Kharagpur and Madras** making major strides in rankings.

What are the Causes of the Sufferings of India's Universities?

- **Poor Governance Structure:** Management of Indian education faces challenges of **over-centralization, bureaucratic structures and lack of accountability, transparency, and professionalism.**
 - The Ministry of Education is insisting higher education institutions to **increase their intake capacity by 25%**, while the Ministry of Finance has sought to ban **the creation of new teaching posts.**
 - Also, the **spending on higher education**, as a percentage of government expenditure, has **stagnated at 1.3-1.5% since 2012.**
- **Poor Infrastructure:** Poor infrastructure is another challenge to the higher education system of India, particularly the institutes run by the public sector suffer from poor physical facilities and infrastructure.
 - Most Indian universities and colleges have **overcrowded classrooms, poor ventilation and sanitation, and unsatisfactory hostel accommodation.**
- **Poor Teaching Capacity:** The QS World University Rankings 2022 revealed that although Indian universities have improved their performance on academic reputation metric and research impact, they **continue to struggle on the teaching capacity metric.**
 - **No Indian university** ranks among the top 250 for **faculty-student ratio.**
 - Poor performance on teaching capacity is not because of any drop in hiring, but rather **an increased student intake mandated by the government** to implement reservations for **economically weaker sections.**
- **Inadequate Research Grants:** There are **insufficient resources and facilities**, as well as **limited numbers of quality faculty** to advise students. Most of the research **scholars are without fellowships** or not getting their fellowships on time which directly or indirectly affects their research.
 - Moreover, grants under the UGC's minor and major research project schemes have declined from **₹ 42.7 crore in FY 2016-17 to ₹ 38 lakh in FY 2020-21.**
 - India has over 1,040 universities, but **just 2.7% offer PhD programmes**, given paltry funding and poor infrastructure.
 - The **National Research Foundation (NRF)**, to improve research infrastructure in universities, has **not yet been approved.**

- **Fall in Academic Standards:** Academic standards and processes are not being maintained. **Examination paper leaks** have become common.
 - Candidates have anecdotally highlighted examination centre operators **charging a hefty amount from candidates to help them pass.**

How Big is the Financing Problem of Universities?

- Investments in university infrastructure have shrunk. At the central level, **student financial aid was cut to ₹ 2,078 crore in FY 2022-23** from ₹ 2,482 crore in FY 2021-22; **allocations for research and innovation were down by 8%**, reaching ₹ 218 crore.
- The **Higher Education Financing Agency (HEFA)**, which provides funding for all infrastructure loans to institutions, saw its budget reduced from ₹ 2,000 crore in FY 20-21 to ₹ 1 crore in FY 21-22. Instead, **universities have been forced to take loans**, but **have few avenues** to tap into.
- **The University Grants Commission (UGC)** was allocated ₹ 4,900 crore in FY 2022-23 versus ₹ 4,693 in FY 2021-22, but **stifled cash flow has led to delays in salary payments** for deemed/central universities.
 - Faculty members have faced salary delays for months, with **salaries coming in weeks later.**
- **Most universities are running on a deficit** – Madras University saw an accumulated deficit of over ₹ 100 crore, forcing it to seek a ₹ 88 crore grant from the State government.
 - Twelve colleges of Delhi University have seen a financial shortfall, with allocations by the state reduced by nearly half.
 - This has led to **cuts in discretionary spending** - many colleges in Delhi are **unable to afford subscriptions to basic databases and journals.**

What Measures can be Taken?

- **Better Funding:** There is an urgent need to increased funding, along with **establishing dedicated funding streams** for infrastructure grants/loans and financial aid.
 - **Universities can also be freed up to utilise other revenue streams** such as start-up royalties and advertising.

- **Establishment of NRF:** The establishment of the NRF is expected to **connect the academia with ministries and industries** and fund research that is relevant to local needs.
 - **Funding for research needs to rise significantly**, with institutions like the **NRF supplementing (and not replacing) existing schemes** (including those from the Ministry of Science).
 - Funding should also be allocated to **enable course-based research experiences** for undergraduates.
 - Moreover, NRF shall **pose well-defined problems to the researchers**, so that they can find solutions in a goal-oriented and time bound manner.
- **Sustaining Quality Education:** It is disheartening to find that higher education institutions have failed to protect the sanctity of their examinations.
 - Improving this will require a **decentralised approach, with universities allowed to take decisions on academic programmes**, promotions, cohort size, etc.
- **Scaling up existing HEIs:** With the goal of increasing the gross enrollment ratio (GER) from the current 27% to 50% by 2035, India needs to not only open new Higher Education Institutes (HEIs) and universities but also **scale-up existing HEIs**.
 - This massive expansion will not only require **additional financial resources** but also calls for a **new governance model**.
 - Also, our institutions need to **become multi-disciplinary in their scope and offerings and collaborate among themselves**.
- **Ensuring Quality Education:** Aligning the cost of education with the quality of the product is the first step in this direction.
 - **Assessing the quality of education through an employability lens** will ensure that we are **addressing the 'unemployable graduates' problem**.
 - Students prioritise employability when selecting universities; with the rapid changes in technology, future jobs are not yet defined. Therefore, **programmes need to be designed with continuous feedback from the industry**.

- An **employability scorecard** can go a long way in helping students make an informed decision; it can also be used for continued accreditation of universities.

Conclusion:

The NEP 2020 has sought to foster critical thinking and problem solving, along with social, ethical and emotional capacities and dispositions. Enabling this will require an **encouraging ecosystem, with greater funding, autonomy and tolerance of universities** (and activities by students/faculty). Without this, talented Indian citizens will continue to escape abroad, while **policymakers lament India's brain drain**.

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