

Editorial: Reflections from staring at a post-apocalyptic picture of destruction

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WORLD ENVIRONMENT DAY 2025 : REFLECTIONS FROM STARING AT A POST- APOCALYPTIC PICTURE OF DESTRUCTION

As this issue goes to print, 14,000 Palestinian children are feared to be on the brink of death by starvation as per the latest warning issued by the United Nations humanitarian chief. The horrors of almost 20 months of internationally-acknowledged genocide is staring back at us. It has numbed and desensitized our screens to the live destruction of a thriving civilisation and the forced displacement and brutal killings of its indigenous peoples. The images of Gaza reduced to a mountain of rubble, is a doomsday picture of what destructive actions by authoritarian powers mean for the future of our world. Its unimpeded continuance to this date, has bust the myth that a moral compass even exists in the international community or world order that can stop destruction of this magnitude.

What is happening in Palestine does not feel so distant when we examine the trends of destruction and displacement that threaten indigenous lands, culture and existence in other parts of the globe. Going hand in hand is the destruction of the environment and plunder of natural resources, which the indigenous people have been custodians of, to further corporate exploitation through a destructive

While the boardroom conversations on climate change continue on global platforms, what awaits outside air conditioned halls is a world in serious peril. We in India are literally facing the heat. As we speak, the Council on Energy, Environment and Water (CEEW) has reported in its study that 57% of Indian districts, home to 76% Indians, are currently at 'high' to 'very high' risk due to extreme heat conditions. The shifts in weather systems due to the increasing temperatures is leading to a dangerous rise in disasters, and India is at the epicenter. India ranks as the 6th most severely affected country by extreme weather events from 1993 to 2022 on the Climate Risk Index 2025. The Himalayan region has witnessed multiple disasters, with earthquakes, landslides, glacial floods, and heavy rainfall events leading to large-scale loss of property, lives and livelihoods. States like Odisha are frequent victims to cyclones leading to mass displacements. Meanwhile, several Indian states face large-scale devastation due to seasonal floods. As per a 2024 report released by CEEW, between 2012-2022, India witnessed increasingly erratic rainfall, with rise in rainfall in 55 per cent tehsils.

Global warming, the phenomenon of enhanced greenhouse effect, is attributed to uncontrolled greenhouse gas (GHG) emissions. These GHG emissions are a result of destructive developmental activities such as indiscriminate use of fossil fuels, construction, manufacturing, extractive activities and unsustainable development, along with the environmental destruction on account of deforestation, pollution, and waste generation. While our country faces a disproportionate impact of global warming, its fossil-fuel based carbon emissions were 3rd highest in the world in 2023 only after the USA and China. Instead of slowing down on coal production to reduce emissions, India's coal production is on a rise with a record highest of 1047 MT in the fiscal year 2024-2025, marking a 4.99% growth since the previous year. Mining law reforms have aided this push for coal and facilitated private mining. Rampant deforestation for developmental activities, is leading to a loss in forest cover and contributing to increasing carbon emissions.

As a matter of policy

The protective laws governing the environment, forest and natural resources have been systematically dismantled to facilitate developmental activities and "ease of doing business". This has allowed for ease in forest diversion, exploitation of natural resources and construction permits for ill-planned and high-impact projects. The policy, legal and institutional processes that were put in place after long struggles waged by the environmental,

land and indigenous defenders and movements, to protect the right to land, environment and natural resources, have faced severe dilutions, making enforcement of rights difficult by regularising wrongs. When the law itself is changed, it severely impacts the affected communities' rights to access remedy for violations.

Important laws governing grant of clearances to projects have been considerably weakened, such as the Environment Impact Assessment Notification (EIA), 2006 which has been ripped apart by 100+ amendments, the Coastal Regulation Zone Notification that underwent a overhaul in 2019, the recent amendments to the Forest Conservation Act, 1980, and several others. This has led to a loss of valuable rights and protections which were incorporated in these laws. By changing the thresholds and exempting environmental impact assessment of projects before granting environmental clearance, it is now possible for certain projects to proceed, where it would have been otherwise illegal to do so without following the rigorous EIA process to obtain prior clearance.

Struggle to protect rights of Adivasi communities

The individual and community rights of Adivasi communities that have historically protected and inhabited ecologically fragile and biodiversity rich forest areas are being denied through blatant violation of and dilutions to the Forest Rights Act, 2006 and Panchayats (Extension to Scheduled Areas) Act, 1996. Public consultation and

mandatory processes to ensure free prior informed consent (FPIC) of the indigenous and affected communities, are often bypassed, for projects concerning infrastructure development, power etc. When conducted, they are often rendered an empty formality. Simultaneous struggles are ongoing in assertion of adivasi rights, to protect the forests and natural resources from destruction in Chhattisgarh, Odisha, Jharkhand and other parts of the country.

Environmental laws have also been easy to maneuver and change since much of the substantive law is in the form of notifications, and hence parliamentary process of debate and review can be evaded. While at times formal objections are called for from the public, it is often an empty formality with the notifications being passed without suggested changes and without adopting a consultative approach. Even otherwise, the political will and understanding to oppose the laws seriously, when they enter the parliamentary system, appears to be abysmal. A case in point is the Disaster Management Act, 2005, which recently suffered major amendments. In spite of civil society representations addressed to the parliamentarians to send the bill for review due to its devastating consequences, the same were ignored. At a time of increasing precarity and disaster risk, the removal of vital provisions like the ones relating to loan relief and compensation, which alleviate the losses suffered by the people, is a major blow to the rights of the affected community. Meanwhile, as the current model

of development paves way for more disaster, disaster also destroys development, necessitating a deep rethink into the planning and development policy.

The existing laws also suffer from serious non-implementation. The loosening of regulatory control and lack of monitoring and compliance, lends a freehand to the businesses and project proponents to flout laws. From rampant air pollution, discharge of effluents in rivers and water bodies, disposal of untreated industrial waste, reports of violations are frequent, in spite of protections provided under law and progressive judgments of the courts. Meanwhile, the legal fight for accountability in case of violations is an uphill task, with information becoming more inaccessible and court delays often impacting the struggle for justice.

The shift to green energy is also taking place with the same business-oriented and flawed approach, with a focus on mega

projects that are land intensive and unsustainable. These projects, which have the support of international finance institutions (IFIs), are being planned in environmentally fragile and scheduled areas, in disregard of the constitutional protections and the environmental impact. Ostensibly in the name of “just” transition, “green” grabbing of huge tracts of land is underway. Meanwhile, by categorising them as clean energy, projects like Solar Parks are exempt from the EIA process, and hence there is no scrutiny on the devastating impact of such projects.

While legal remedies to uphold the right to life and protect the environment are becoming more inaccessible, law is instead being increasingly weaponised against indigenous and land rights defenders who are on the frontline to protect the environment and their rights.

This issue of the bulletin will take us through poignant accounts of cases from across the country

that provide insight on what is underway in the name of development. Yet, it is only a needle in the haystack.

Finally, in the midst of the ferment going on in the country, with the high level of mistrust and enmity created on account of the impunity granted to communal hate and intolerance, this issue seeks to be a quiet reminder of the widening gaps between socially marginalized communities and threatening collective action necessary to protect their rights. This vitriol is clouding the landscape, making every other legitimate concern secondary and adversely affecting the struggle to uphold economic, social and cultural rights, and to protect the environment.

In the current framework, the collective fight to conserve the environment and uphold human rights will have to necessarily prioritise the assertion and protection of civil liberties.

WAYANAD LANDSLIDE 2024: A HUMAN RIGHTS PERSPECTIVE ON ENVIRONMENTAL DISASTER AND SOCIOECONOMIC FALLOUT

MAJU VARGHESE, SARATH CHELOOR

Introduction

On July 30, 2024, the beautiful landscapes of Wayanad district in Kerala were devastated by one of the most devastating landslides in India's recent history. Triggered by incessant rainfall exceeding 570 millimetres over 48 hours, the landslide in Meppadi Panchayat led to the loss of over 400 lives, with 32 individuals still missing and presumed dead as per the government's February 2025

notification. This calamity not only underscores the environmental vulnerabilities of the region but also brings to light significant human rights concerns, particularly regarding the rights and welfare of the affected communities.

Environmental and Climatic Factors

Wayanad's topography, characterised by steep slopes and elevations ranging from 700

to 2100 meters, inherently predisposes it to landslides. The Geological Survey of India has long identified the Wayanad-Kozhikode border as highly susceptible to such disasters. However, the severity of the 2024 landslide was intensified by anthropogenic factors. Unregulated deforestation, expansion of plantations, and unscientific land use have significantly destabilised the region's ecological balance.

Climate change further compounds these risks. Studies from the Cochin University of Science and Technology (CUSAT) indicate that the warming of the Arabian Sea contributes to the formation of deep cloud systems, leading to unpredictable and intense rainfall events. Moreover, recent assessments reveal a staggering 62% decline in Wayanad's forest cover, diminishing the land's natural resilience against such disasters.

The Catastrophe Unfolds: Facts and Figures

The landslide's impact was catastrophic. Satellite imagery from the Indian Space Research Organisation (ISRO) on July 31, 2024, revealed that approximately 86,000 square meters of land had been displaced, with debris traveling up to 8 kilometers from the origin point. This massive earth movement engulfed forests, farmlands, and settlements, altering the course of the Iruvanipuzha River and breaching its banks.

Infrastructure suffered immensely:

- Approximately 2,007 houses and 111 cattle sheds were destroyed.
- Three estates were ravaged, affecting the livelihoods of 409 workers.
- Agricultural damage spanned 626 hectares, with 359 hectares belonging to small and marginal farmers.

Beyond the immediate physical destruction, the disaster disrupted the socioeconomic fabric of the region, affecting industries, tourism, and forest

productivity.

The destruction of homes and means of livelihood has left many in precarious conditions. While property owners have avenues for compensation, those without formal ownership—such as tenants, informal workers, and migrant laborers—often find themselves excluded from relief measures. In many disasters, those who are indirectly affected and do not fall within the officially designated impact zone are often excluded from relief measures.

Humanitarian Response and Rehabilitation Efforts

In the immediate aftermath, the Kerala government established 45 relief camps, providing shelter to over 4,000 individuals. The state health department set up control rooms to coordinate emergency assistance, deploying at least 1,500 rescue personnel, including forensic surgeons.

The government of Kerala, recognising the need for long-term solutions, approved a comprehensive rehabilitation project. This includes planning an establishment of two townships equipped with essential amenities, aiming to provide a safe and sustainable living environment for those affected. Additionally, a rental policy was formulated to assist survivors during the transition period. Affected families are provided with a monthly allowance of ₹6,000 to facilitate their stay in rented accommodations or with relatives until permanent housing is arranged.

Financial Accountability and the Loan Waiver Debate

A significant point of contention

has been the financial liabilities of the disaster victims. With thousands of homes and agricultural lands damaged, people were in a precarious situation when loan agents approached those living in relief camps to recover EMIs for loans they had taken. The fact that the assets created through these loans—including houses and farmland—had been destroyed did not deter the agents from demanding monthly installments.

Residents of the affected areas demanded that their loans be waived and that they be granted relief to rebuild their lives. The total outstanding loans in the affected region amount to approximately ₹35.30 crore, including ₹11 crore in agricultural loans, with the remainder comprising home loans, personal loans, SHG linkage loans, vehicle loans, and others.

In response to the situation, the Chief Minister and the agriculture minister demanded a complete loan waiver. The Chief Minister convened a meeting of the State Level Bankers Committee and formally placed the demand before all banks, while also announcing a loan waiver from the state-controlled Kerala Bank. The write off was a model for other banks as loans were waived for the following categories or people. It included, waive off to those who lost their lives, those who lost houses, property, establishments, livelihoods, those who lost family members, those who got isolated because of destruction of roads etc. those who lost farm lands and crops and miscellaneous category. These categories show the care and perspective which needs to be employed by the banks.

Public sector banks, despite mobilising funds from the state and generating substantial profits, have remained largely insensitive to the needs of the common people. It is important to note that in 2024 alone, these banks wrote off loans worth over ₹1.70 lakh crore, while earning profits exceeding ₹1.4 lakh crore. This exposes a troubling double standard: generous write-offs for corporations, and a stony silence when it comes to addressing the concerns of ordinary citizens. While these banks are quick to collect deposits from the public, they reserve loan write-offs primarily for corporate borrowers and often shirk their responsibilities to support communities in distress—even in the face of natural disasters.

The High Court of Kerala, which had taken suo motu cognizance of the need to prevent and manage natural disasters, also took note of the public demand for loan waivers. During the hearing, the court directed the central government to file an affidavit on the matter and expressed support for a loan waiver, invoking provisions under the Disaster Management Act.

However, in its affidavit, the central government informed the court that loans of those affected by the landslides in Wayanad

would not be waived but only rescheduled or restructured. Subsequently, section 13 of the Disaster Management Act, 2005—which could have supported such a waiver—was removed through an amendment to the law passed by the government.

Lessons and the Path Forward

The Wayanad tragedy serves as a stark reminder of the intricate linkages between environmental protection and human rights. To prevent future disasters and uphold the rights of vulnerable populations, several measures are needed:

- **Environmental Conservation:** Implementing sustainable land-use practices, reforestation, and strict regulation of construction in ecologically sensitive zones.
- **Inclusive Rehabilitation Policies:** Ensuring that relief and rehabilitation efforts encompass all affected individuals, regardless of property ownership or socioeconomic status.
- **Financial Relief Mechanisms:** Establishing clear guidelines for loan waivers in the wake of natural disasters to alleviate the financial burden on victims.

Community Engagement: Facilitating the active participation of local

communities in disaster preparedness, response, and recovery planning.

Conclusion

The 2024 Wayanad landslide is not merely an environmental disaster but a human rights crisis that exposes the vulnerabilities of marginalised communities in the face of climate-induced calamities. Addressing the multifaceted challenges arising from such events requires a holistic approach that integrates environmental sustainability, socioeconomic equity, and human rights considerations. As we reflect on this tragedy, it is imperative to transform lessons learned into actionable policies that safeguard both people and the planet.

(Maju Varghese works as a Coordinator with Partners in Justice Concerns India. He also serves as the Asia-Pacific focal point for the Internationalist Solidarity Systems of Friends of the Earth.)

Sarath Cheloor is a social activist who has been actively working with social movements and organisations for last 20 years and assists marginalized communities in their struggle for justice.)

WHY ARE COURTS UNABLE TO IMPLEMENT THEIR OWN ORDERS TO PROTECT OUR RIVERS?: THE CASE OF SABARMATI RIVER POLLUTION

KRISHNAKANT CHAUHAN

Today the intersection of environmental conservation and judicial intervention has emerged as a critical area of legal discourse in India, particularly in the context of river conservation. In India rivers are integral to the

cultural, economic, and ecological fabric of the country, and yet, many of them are facing unprecedented levels of degradation due to urbanization, industrialization, pollution, and encroachment. In this regard, the

role of the judiciary in shaping environmental policy and governance cannot be overstated. Judicial activism has often played a crucial role in holding the government accountable for its

responsibilities toward the environment, compelling them to take action where legislative and executive mechanisms have fallen short. The Judiciary has applied judicial principles like the Doctrine of Public Trust and the Polluter Pays Principle. While the judiciary has been assertive in many environmental cases, it has seemed to have lower its guards when the environmental issue would lead to raising questions on the faulty and lopsided 'development' model and reckless urbanization.

The recent drive to cleanup the Sabarmati river front's pond by emptying it, exposed illegal discharge of untreated sewage into the Sabarmati. This state of affairs is continuing after more than 8 years of the Supreme Court Judgement in Paryavaran Suraksha Samiti vs Union of India WP(C) 375/2012 and the ongoing WPIL 98/2021 which was taken up suo moto by the Ahmedabad bench of the Hon'ble Gujarat High Court, then headed by Justice J.B. Pardiwala and Justice Vaibhavi D. Nanavati.

As the matter continues, the Ahmedabad Municipal Corporation (AMC) has been submitting its progress reports before the bench of Chief Justice Sunita Agrawal and Justice Vaibhavi D. Nanavati claiming that 'All is Well' and there are no illegal discharge connections into the Sabarmati. The issue pertains only to the upgradation of Sewage Treatment Plants (STPs) which when completely upgraded will treat the sewage as per the norms.

WP(C) 375/2012 - a landmark case to address river pollution

In Paryavaran Suraksha Samiti (above), the Hon'ble Supreme Court bench headed by then CJI Justice Jagdish Singh Khehar, was very categorical when it said, *"10. Given the responsibility vested in Municipalities under Article 243W of the Constitution, as also, in item 6 of the 12th Schedule, wherein the aforesaid obligation, pointedly extends to "public health, sanitation conservancy and solid waste management", we are of the view, that the onus to operate the existing 'common effluent treatment plants, (read – Sewage Treatment Plants) rests on municipalities (and/or local bodies). Given the aforesaid responsibility, the concerned municipalities (and/or local bodies), cannot be permitted to shy away, from discharging this onerous duty."*

The Hon'ble bench further stated, *"The norms for generating funds, for setting up and/or operating the 'common effluent treatment plant' (read – Sewage Treatment Plants) shall be finalized, on or before 31.03.2017, so as to be implemented with effect from the next financial year..... In case, such norms are not in place, before the commencement of the next financial year, the concerned State Governments (or the Union Territories), shall cater to the financial requirements, of running the "common effluent treatment plants", which are presently dis-functional, from their own financial resources."*

The judgement also laid down a timeline for implementing the directions and the National Green Tribunal was entrusted to supervise complaints of non-implementation of the instant

directions and monitoring of the implementation deadlines. The bench felt that mere directions are inconsequential, unless a rigid implementation mechanism is laid down.

The judgement also allows 'private individuals, and organizations, to approach the concerned Bench of the jurisdictional National Green Tribunal, for appropriate orders, by pointing out deficiencies, in implementation of the above directions.'

The bench fixed the responsibility of implementation on the states by directing that, *"The Secretary of the Department of Environment, of the concerned State Government (and the concerned Union Territory), shall be answerable in case of default. The concerned Secretaries to the Government shall be responsible of monitoring the progress, and issuing necessary directions to the concerned Pollution Control Board, as may be required, for the implementation of the above directions."*

The Gujarat High Court and its case concerning Sabarmati river

The suo moto PIL initiated by the Hon'ble Gujarat High Court has been instrumental in correcting many lacunas leading to the release of pollutants into the Sabarmati river in the form of treated/untreated sewage and industrial effluents. The court formed a joint task force comprising concerned departments and experts to identify and address the factors and impediments leading to pollution being released into the river.

One of the central issues in this case is the inefficiency of the existing STPs. Reports indicate that many of these plants are not functioning optimally and fail to meet the standards set by the Central Pollution Control Board (CPCB). The analysis of treated water from these STPs has revealed high levels of contaminants, particularly in terms of Total Dissolved Solids (TDS) and color, which exceed permissible limits. This situation poses a significant risk to the Sabarmati River, which serves as a vital water source for the surrounding communities.

Despite these orders, the court has expressed dissatisfaction with the pace of progress. The AMC has reported some advancements, such as the establishment of a task force to monitor illegal connections and the initiation of upgrades to existing STPs. However, the court remains concerned that these efforts are insufficient to address the scale of the problem effectively.

The implications of inadequate sewage management extend beyond legal and administrative concerns; they pose significant risks to public health and the

environment. The Sabarmati River, once a lifeline for the communities along its banks, has become a repository for untreated waste, leading to the proliferation of waterborne diseases and the degradation of aquatic ecosystems. The contamination of soil and water resources due to industrial effluents further exacerbates the situation, threatening the health of residents and the sustainability of local agriculture.

A Long Wait

The restraint and patience shown by the courts towards the administrative failure to comply with the orders is telling in the sense that the Hon'ble Supreme Court in Paryavaran Suraksha Samiti (above), prescribed a timeline ending in 2020 for the government to come up with Treatment infrastructure in the whole of the country.

There is a direction for continuous oversight by the National Green Tribunal (NGT) to implement the Supreme Court judgement. The NGT has also passed orders prescribed for fines on entities releasing pollutants into the river or other waterbodies. However when it

comes to administrative and government inefficiencies, the courts have been far conservative in acting against the non-performing officials and Urban local bodies, as is seen in the case relating to Sabarmati river pollution.

Whether this is a result of judicial restraint or failure to hold the government accountable to ensure implementation, compliance and monitoring, and ensure a hard stop on river pollution, this delay is taking a devastating toll on the life-giving rivers like Sabarmati that have been rendered into vessels to dump sewage and industrial waste. As a result, even these progressive judgments and court initiatives for river conservation are rendered ineffective, with blatant violation and wilful ignorance of these judgements and norms continuing. How much longer a rope should the courts give the administration, is at the heart of the issue to be debated.

(Krishnakant Chauhan is an environmentalist and social activist based in Surat. He is part of Paryavaran Suraksha Samiti and a member of People's Union of Civil Liberties, Gujarat unit.)

HONNAVAR PORT : A TRAGIC TALE OF A FISHING COMMUNITY'S RESISTANCE MET WITH VIOLENCE AND CRIMINALISATION

VIDYA DINKER, RAJANI IYER, GROWTHWATCH

While their ongoing fight for justice is far from over, the long-drawn struggles of the fisherfolk of Kasarkod Tonka 1 & 2, fishing villages in Honnavar Taluk along the west coast of India in Karnataka state deserve to be shared and retold.

The small but strong fishing

community here, which originates from 5 different villages in Honnavar have been putting up a resistance since 2012 to defend the coastal ecology, their livelihoods, and their homes against the proposed Honnavar port by Honnavar Port Pvt. Ltd. (HPPL). The port is being developed on land belonging to

five fishing villages of Kasarkod Tonka 1, Tonka 2, Pavinkurva, Mallukurva and Honnavar rural. However, since the beginning of this project, the fishing community were unhappy since they were never consulted since the time the port was first proposed and approved. It is their case that the port threatens the

livelihood & futures of over 23,500 fisher-folk who are dependent on fishing and fish drying as their only source of livelihood. A big percentage of these are women who are not just part of the fish drying industry but play a crucial role across the supply chain. The fish trade is almost completely women-centric. Women from Kasarkod and nearby villages, and as far as Honnavar town, used to come and work in the docks and in the fish drying areas to clean, salt, dry and pack the produce. The locals are upset that the upcoming port has resulted in these women losing their sources of livelihood permanently. The land that is now the port area was earlier used as a common fish drying area with sheds for seasonal storage. However the same was allocated to the port, forcibly evicting them from common land and private patta land which submerged and remerged over the years. According to them, the port will permanently destroy the pristine ecosystem including their livelihoods that are unique to the estuary of the Sharavathi River that they have safeguarded for generations with their sustainable fishing practices.

What is also a striking aspect of life here in Kasarkod Fishing Jetty is that around 50,000 to 60,000 migrants from surrounding places of Honnavar come during the fishing season, earning a living through activities related to fishing and the fish trade. They include, among others, fisher folk, women labourers at the docks, fish vendors, loaders, truck-drivers, entrepreneurs and those who operate the boats. They express fear that the entire local Tonka

market and the work infrastructure would collapse once the port is built, creating mass displacement, unemployment and deprivation. They raise pertinent questions on their right to life and livelihood – *“Where will all of them who are dependent on the fish trade go? What will happen to the ocean and marine life they worship? What will happen to their ancestral homes that have lined the beach for years? What will happen to the fishing villages here as the land they stand on come increasingly under private control?”*

The Karnataka Panchayat Raj Act, 1993 has the objective of greater participation of the people in the governance and decision making for their villages (Gram Panchayat, Taluk and District level) and informing the people, holding discussions, and taking decisions through the Gram Sabha of the concerned Village Panchayat. As per the 73rd Amendment of the Constitution of India, it is now a constitutional requirement to ensure participatory decision making. It is therefore incumbent upon the government to consult the people, and the local bodies to determine a project's need and discuss with the people the impact vis-a-vis the construction of a port allied infrastructure through common land. However, the people of Kasarkod have been completely left out of the process that impacts their lives irreversibly.

Repressive measures against Kasarkod fishers

Even though the upcoming port is set to harm the ecological balance of the area and their

livelihood, leaving the community no choice but to embark on democratic protest - a right guaranteed to them under the Indian Constitution, the State government in the last 4 years has resorted to illegal means of using force to threaten, intimidate and even detain for weeks those who have raised their voices to educate, organise and resist. This is a community of peaceful and hardworking intergenerational indigenous fisher people. The local men and women of the community are being repeatedly harassed and intimidated by the current dispensation, through the filing of false FIRs on trumped up charges involving petty issues. The police have indulged in instances of verbal abuse and powerful intimidation, while blowing out of proportion everyday matters. All this because the community members are simply standing up for their rights and protesting peacefully against the proposed private port. There is now an atmosphere of fear, oppression, intimidation, lack of trust in the village. The tranquil villages, it's quiet roads and small bylanes are frequently filled with policemen. The villagers have been threatened, harassed and intimidated frequently in the name of law and order and to facilitate the illegal and underhand activities of the Port Department and the project proponent, Honnavar Port Private Ltd.

False FIRs, cases have been slapped on the protestors, especially the leaders of the community, including the women who came out to protect their homes and their livelihoods. The children are stressed and

traumatised since their parents have been arrested and detained for several days and even weeks without either parent at home. Representations to State Human Rights Commission (SHRC), Karnataka, National Human Rights Commission (NHRC), State Women and Child Welfare department etc., have fallen on deaf ears and the response from all departments of the state from the District Collector to the Police or the Environmental departments, is standard, that the Port has to come up and *“villagers who are protesting are a handful of vested interests who are creating nuisance and blocking the project unlawfully”*. The irony is hard to miss.

In November-December 2016, the fisherfolk saw the first instance of police deployment for demolitions of the sheds in the port area. As per villagers' accounts, JCBs were brought in and sheds demolished, police resorted to Lathi charge as well. This marked the beginning of the loss of trust in the police felt by the villagers and the administration also began to brand the protesting villagers as “troublemakers” who need Police to control them when port construction is to be done.

On June 26, 2021, in the middle of the monsoon season and the second wave of the pandemic, a large police force arrived to supervise the demolition of a shed, where the fishers kept their boat equipment and nets. There was no advance notice to anyone, and everyone was caught off guard. This was the first forced action taken in order to lay an illegal road, where police officers including women police were deployed to tackle

the women fishers from the village present. Until the trucks and machinery arrived, the fisher people were not aware that the port access road was to be constructed on the beach just outside their homes. When they came out to protest, they were pushed, shoved and shut down. The fisher people stood in the rain for hours, helpless.

In January 2022, full-fledged construction of the port access road was attempted in the midst of the turtle nesting season, without any permissions or due process being followed. The Port Department and HPPL sought the help of the Police Department and about 600-700 police personnel were deployed. Some fisherwomen sat in peaceful protest that morning and kept asking the authorities to share a copy of the clearance/permissions required to construct the road. They were forcibly picked up and illegally detained for many hours. Many were injured due to rough handling and indiscriminate force used by the police. A nursing mother was also held and one of the women who was pregnant, miscarried the very next day. In violation of their rights, phones were taken away and there were no women constables provided to escort them back late at night. It was just the beginning. Subsequently multiple false/fabricated FIRs were filed against those who have been active, vocal and determined to ask for justice for the fisher community and resisting the illegal construction activities. There are close to 15 FIRs now on approximately 150 people in the fishing village.

Continuing police excesses

and the threat of loss of homes

On January 31, 2024, around 3:00 PM, once again without any advance information to the Gram Panchayat, police force in large numbers arrived and asked villagers to stay away from the beach, the common areas outside their homes and all public spaces, since authorities were to conduct a survey. Meanwhile, all the villagers had gathered in large numbers to hold peaceful demonstrations since once again no process had been followed, and the police force was being used again to support the port activities. The police resorted to manhandling of villagers during this time and many who have been vocal in the opposition of the upcoming Honnavar port were singled out and dragged into the police vans. The male personnel dragged women into the police vans, hurting some of them in the process. While 18 villagers were kept in judicial custody for 5 full days, the survey activities were completed. An FIR was filed with completely false charges accusing the detained men and women of attacking police personnel. Hundreds of villagers were present, and hundreds of police forces were deployed when the incident occurred. There were many video recordings made by police and the citizens, which reveal the manner in which the fishers were treated. A complaint has been filed by Mr. Chandrakant Kochrekar, State Secretary (Karnataka), National Association of Fishermen on February 3, 2024, with the SHRC, Karnataka.

On February 25, 2025, the Karnataka State Port officials arrived at the Tonka with massive police protection to facilitate an

unofficial land survey for the connecting road from the main highway to the proposed private port site. The police arrived at 7.00 AM and the survey officers arrived at 9.30 AM creating a sense of immense curiosity and restlessness amongst the villagers. The survey work was being carried out in spite of villagers opposing it in January by sending a representation from the villagers. As the villagers started gathering near their homes, the police started to drag many of them into the waiting vans. Many of the police personnel did not wear name tags and were wearing masks raising serious questions about what was at play. Some of the fisherfolk, disappointed and helpless, jumped into the sea, willing to give up their lives in the view of the constant injustices they were being subjected to. By afternoon, more than 30 people had been taken to various police stations in neighboring areas. Women, old people and many youngsters were detained. In the evening, around 4:00 PM police personnel went into the homes of the village, searching for people and dragged some of them out of their homes and took them to unknown locations in different directions; some of them who were dragged from their homes by the police included women who had small children, leaving the children weeping for their mothers. Police beat up young men and those who made videos were yelled at and hurled abuses and the phones snatched away.

If they were returned, a factory reset was unauthorisedly carried out to erase the data including photos and videos; however, for some of the arrested people, their phones were taken and never returned.

Until much later in the day, no one knew how many villagers were detained and their corresponding locations. By late night, the women and a few youngsters who were detained later in the evening were let go. But until the early hours of February 26th morning, the whereabouts of the others were not known. Those of us in Bangalore, following up with the State Home Minister's office were informed that they were taken to Dharwad, produced before court with serious charges filed against them and sent to prison. By February 26th, it had come to our notice that an FIR had been lodged against 45 fisher people of Kasarkod, Honnavar. They have been falsely charged under as many as thirteen sections of the Bharatiya Nyaya Sanhita that even attract punishment extending to death sentence and life imprisonment. Amongst those criminally charged include 38 men and 07 women named in FIR No. 0049/2025 registered against them at Honnavara Police station.

False information in the FIR

What is shocking is that the FIR No. 0049/2025 includes names of the fisher people who were not

present in the village on the day. Two of them had come to meet a representative of the Chief Minister on 25th February, around the same time as when the FIR was filed. Additionally, Rekha Rajesh Tandel who was critically injured when she jumped into the sea was taken away in an ambulance to a hospital. Bhaskar Tandel shown as Accused No. 10 also was not present in the area since he accompanied Rekha Rajesh Tandel to the hospital. Accusing them of an offence that cannot be committed in absentia, is a new level of injustice!

In light of the recent survey of February 2025, the community is now faced with the threat of losing their homes in addition to the pre-existing nightmare of loss of their livelihoods. Many of them are additionally burdened with severe mental and financial distress due to the false cases they face. A peace loving small indigenous fishing community that was living in dignity through their hard toil in the sea and on land is today on the brink of annihilation through a series of actions to bring up a Port on a small sandspit in an environmentally sensitive zone.

(Vidya Dinker and Rajani Iyer are activists voluntarily supporting the fisherfolk opposing the port project since 2021. Vidya founded Growthwatch. Rajani is an environmentalist based in Karnataka and part of Growthwatch.)

THE OTHER SIDE OF GREEN/RENEWABLE ENERGY: KARBI PEOPLE'S STRUGGLE AGAINST A MEGA PROJECT

PRANAB DOLEY

The Climate Change Narrative has brought in major debates for the Renewable/Green energy

against fossil fuel globally. The global push is to cut down on emissions of CO2 in-order to

keep the warming below 2 degree as per the Paris agreement of the convention of

parties. The climate conventions do have their own justified supporters and critics. The global turn of totalitarian states and corporations leading the way, also has its justified fear from the marginalised states and peoples of the world.

The need for a just energy transition is the call of the hour. But who will determine the Justness of this transition is a challenge for humanity, would justness mean the unheard voices and Marginalised beings both human and non-human and environment as a whole be respected?

Here, I, as Spokesperson of the Karbi Anglong Solar Power Project Affected Peoples Rights Committee, would like to zoom in into the aspect of a 1000 MW solar project in Karbi Anglong, Assam, India. However, every story has a background and by quickly scrolling through the facts we join the dots.

The Indian government's ambitious target of achieving 500 GW of renewable energy by 2030 (i.e., 50% power through renewables) is being pushed by setting up Mega solar, Wind, Hydro, Compressed Biogas etc. facilities. The incessant drive for energy to fuel the ever-growing energy intensive development model has hit Assam.

The Assam government's target to achieve 3000MW of renewable energy by 2030 is being supported by the international finance institution Asian Development Bank (ADB). Solar energy is being majorly pushed through as a part of this target. There have been multiple small and large solar power projects in

the state which are being pushed through different state and private entities. Azure Pvt. Ltd is readying 90 MW in Multiple sites across the state, SJVN Green Energy Limited is building a 50 MW, APDCL and Oil India Limited has set up a 25MW plant in Namrup thermal Plant area and many other projects have been underway in different parts of the state. The mega projects of 1000 MW in Karbi Anglong Autonomous Hills District Council and another 1000 MW Project in the Dima Hasao Autonomous Hills District Council are at different stages of implementation.

The Asian Development Bank has entered into a Public Private Partnership model solar park financing and technical assistance of a 1000MW Assam Solar Park to be built with the state-owned entities Assam Power Distribution Corporation Ltd., Oil and Natural Gas Corporation Ltd. and Tripura power company Ltd. The private partnership of the project has not been disclosed yet. 50% of the fund which is \$435.25 million would be granted as Loan to the Assam Government by the Asian Development Bank and another 25% would be invested by the state entities and the rest would be privately invested.

The Assam Solar Project to be set up in Karbi Anglong, Assam would be acquiring a vast land mass of 18,000 Bighas of land in the East Karbi Anglong area. This land would be taken up to build a multi-tranche public private partnership model solar power park.

Karbi Anglong Autonomous Council: People's voices

Special status has been given to the Karbi Indigenous peoples under the sixth schedule of the Indian Constitution in 1951. The status of a scheduled area is accorded to protect the indigenous people and their way of life. However, the Karbi Anglong Autonomous council has been plundered of its resources and its peoples for generation. The Karbi Anglong people still continue their struggle for their self-preservation in their own right over their culture, their land and their future.

We walk together with the 24 villages (more than 20,000 individuals) that would be directly impacted by the Solar project, the resistance to the mega project started in 2023. A well-crafted petition to the Deputy Commissioner and the implementing agencies read out in detail about how the project is a complete takeover of their land and is nothing different than a colonial takeover completely ignoring the people's rights to their own land and Heritage. Numerous representations have been made to all the concerned authorities, constant meetings have been held among the people, large demonstrations and protest rallies have been undertaken.

'This is the land of our ancestors, and we have received Ramhoks (pattas as per the traditional laws) granted to us by the Rong Asars (village Headmen) of our Sar Van Keps (village council)' spoke a Karbi elder, John Ingti Kathar, a retired Bureaucrat and Political Leader, in one of the joint protests in Diphu the district headquarters. The autonomous council and the sixth schedule were designed to give judicial

legitimacy to the traditional administrative and socio-political bodies of the indigenous peoples. 'We have been here since times immemorial, and our ancestors have built this space, and we continue to protect the land and the forest rivers and the hills for our future generations' says Riso, one of the traditional heads of a village. Another says, 'It's not only our home but also home to our deities and also the wild animals of the forest, the elephants and other animals too live here in this land'.

Anita Mech, another farmer from the area reiterates that 'the productivity of the land, its rich not only in rice but also the major horticultural area and sending huge produce to the nearby markets of Dimapur and Diphu. This agriculture and forest produce not only sustains the local villagers but also hundreds of tenant agricultural families in the area.'

Laws bypassed, empty process of granting approvals

All the above realities are bartered into a narrative in the

documents produced in the format of legal procedures by the Local Authorities and submitted for clearance of the project in Indigenous territory. The national laws applicable here have been bypassed without the need to do any form of free and prior informed consent (FPIC) or public hearing procedures with respect to an Environment Impact Assessment or Social Impact Assessment as per the environmental or land laws and under the constitution. The Indian government has exempted solar power projects from the requirement of environmental clearance as per the existing laws.

The Local council administration here has played into the hands of the big capital and the state government bringing into question the existing power of the sixth schedule. The colonial narrative of degraded or waste land is reintroduced to snatch away land and forests of the indigenous communities.

The ADB as an international Multi Government Entity has its own process and by definition they

follow the process of Environmental and Social Standards requirements primarily when it comes to indigenous territories and the impacts on which require FPIC. In this scenario there have been allegations of coercion of and non-consultation with the originally affected villagers.

Here the people in their villages spend sleepless nights wondering what their fate would be. Will the only home they knew be taken away from them with the batons of the state, paving the way for private entities to garner profit out of their lands. Should the indigenous still live to harness the earth or are they mere disposables in the idea of a not so just transition. However, this debate is to be continued until we all as a collective humanity find our way through to redemption or doom.

(Pranab Doley is a political activist from Assam and Spokesperson, Karbi Anglong Solar Power Affected Peoples Rights Committee.)

KILLINGS OF ENVIRONMENTAL HUMAN RIGHTS DEFENDERS : THE DIRE COST OF FIGHTING ILLEGAL MINING IN TAMIL NADU

HENRI TIPHAGNE, ASHISH REDDY

Like everyone has a right to a clean environment; it is part and parcel of the right to life, which is a fundamental right enshrined in the Indian Constitution; every Indian citizen also has a fundamental duty to safeguard the environment. Anyone, either an individual or a group, who works to protect and promote the human right to a clean, healthy and sustainable environment, including water, air, land, flora

and fauna, is identified as an Environmental Human Rights Defender (EHRD). EHRDs are often stigmatized, criminalized, threatened and killed for their work to protect our environment, and they face increased risks based on intersecting patterns of discrimination, exclusion, and marginalization. Two such instances from Tamil Nadu, which highlight the fatal risks faced by EHRDs, are discussed

in this article.

Illegal mining has become rampant in Tamil Nadu, particularly in Karur, Madurai, and Pudukottai districts, where blue metal minerals are abundant. Over the past two decades, mineral exploration and the granting of mine and quarry licenses have increased significantly, leading to widespread environmental

degradation. In 2020, the Environmental Impact Assessment (EIA) was made mandatory for all mining activities in Tamil Nadu. However, this regulation has inadvertently contributed to illegal mining, as many operators continue extraction beyond their lease periods due to weak enforcement and lack of oversight on mine closures. The unchecked mining operations have severely impacted agriculture, polluting water sources and affecting the health of villagers. The fine dust emitted from stone crushers contributes to air pollution, causing respiratory illnesses among local communities and disrupting livestock farming. The use of advanced machinery for mineral extraction has accelerated the depletion of natural water sources, drying up wells and affecting irrigation.

Jaganathan, Karur district

Jaganathan (50) a farmer from Pugalur Taluk, Karur district, had been advocating for the closure of illegal quarries in Kalipalayam village, Kuppam panchayat. The quarries and crushers were run illegally after expiry of the lease period in 2015. The stone crusher was located adjacent to the land of Jaganathan, which affected his crops and livestock. This prompted Jaganathan to advocate for the closure of illegal quarries before various government officials. To stop his activism, the owners and operators of quarries attempted to murder Jaganathan in 2019 by attacking him with brutal weapons. Jaganathan survived the attack, registered a complaint and ever since sought police protection, fearing further attacks from the quarry owners. Despite

several threats, he continued to advocate for the closing of illegal mines by submitting petitions to various government authorities. This resulted in the closure of the quarry and crusher on September 8, 2022. On September 10, 2022, the owners and operators of the quarry conspired and murdered Jaganathan by ramming him with a truck operated by the quarry. Then they tried to stage it as an accident. It was only upon the intervention of activist Shanumugham on the ground, along with other Human Rights organisations, before the Inspector General of Police, Central Zone, that the FIR was altered from accident to murder, and the investigation officer was changed. The accused were arrested and placed in judicial custody, they are currently awaiting trial.

The case of Jaganathan has been taken up by the United Nations Special Rapporteurs (UN SR) on Human Rights Defenders, the UN SR on Sustainable Environment and the UN SR on extrajudicial, summary or arbitrary executions. The UN SRs highlighted India's obligation under ICCPR and the Declaration on Human Rights Defenders.

Jagabar Ali, Pudukottai district

Jagabar Ali, a small business owner of Thirumayam, Pudukkottai district, Tamil Nadu, had been advocating for the closure of an illegally operated stone quarry in Pudukkottai district. In January 2023, he had submitted a representation seeking closure of illegal quarries operating in Thirumayam, Pudukkottai district, to the

collector, Assistant Director of Mineral Resources Department, Superintendent of police and Director of Tamil Nadu Geology and Mining Department. Since then, he had been receiving threats from quarry owners, which he reported to the police and sought police protection. He intervened before the High Court (WP (MD) 8946/2023) and obtained an order from the Madurai bench of the Madras High Court on September 5, 2023 to investigate illegal stone quarries in Pudukkottai district. He had assessed the loss of Rs 840 crores of mineral resources due to illegal mining on January 10, 2025 in an online interview. Shortly thereafter, the owners and operators of an illegal quarry conspired together to kill Jagabar Ali by ramming him with a tipper lorry while he was proceeding on his motorcycle on January 17, 2025, due to which he sustained grievous injuries and died on the spot. On January 18, 2025, 24 hours after the murder, Thirumayam police registered an FIR in Crime No. 9/2025 as unnatural death. Despite the oral and written complaints given by the wife of Jagabar Ali to Thirumayam police, his body was kept without a freezer and post-mortem was conducted by an assistant surgeon along with pharmacy staff without following any of the judicial guidelines or NHRC protocols. The family of Jagabar Ali had to approach the Madurai bench of the Madras High Court seeking a re-postmortem. Only then was the investigation transferred to the CB-CID.

Evading laws and preventing justice

It is the duty of the state to

protect the right to life. The state is required to take special measures of protection towards persons in vulnerable situations whose lives have been placed at particular risk because of specific threats or pre-existing patterns of violence, as provided in the General Comment of the Human Rights Committee on the International Covenant for Civil and Political Rights (ICCPR). The States are also required to take the necessary measures to respond to death threats and to provide adequate protection to human rights defenders, including the creation and maintenance of a safe and enabling environment for defending human rights. Investigations and prosecutions of potentially unlawful deprivations of life should be undertaken in accordance with relevant international standards, including the Minnesota Protocol on the Investigation of Potentially Unlawful Death, and must be aimed at ensuring that those responsible are brought to justice, at promoting accountability and preventing impunity. Under article 12 of the United Nations Declaration on Human Rights Defenders, states have an obligation to take all

necessary measures to ensure the protection of everyone against any violence, threats, retaliation. As per Framework Principles on Human Rights and the Environment, states must provide a safe and enabling environment in which individuals, groups and organs of society that work on human rights or environmental issues can operate free from threats, harassment, intimidation and violence.

In both cases, the activism of EHRDs resulted in the closure of illegal mining activities. In Karur, closure of the quarry led to the murder of Jaganathan, and in Pudukottai, the death of Jagabar Ali forced the district administration to enforce the order of the High Court dated September 5, 2023, which is to close illegal quarries in Pudukottai District. In both cases, the EHRDs faced threats which were reported to the police, and protection had been sought. But the police failed to provide protection and ignored the pleas of the EHRDs. In both cases, the police sided with the quarry operators and registered the case as an accident. It was only due to the intervention of activist

Shanumugham and a human rights organisation that the Jaganathan case was transferred to other officers, and the Jagabar Ali case was transferred to CB-CID. Even though the accused have been arrested and the quarries have been closed, the families of the EHRDs are facing significant threats. They have applied for witness protection under the Witness Protection Scheme 2018, but the police are yet to facilitate the same.

In spite of the serious threats that EHRDs face, the National Human Rights Commission (NHRC) of India has so far not classified the subcategories of HRDs. The Courts as well as National Human Rights Institutions in India have not implemented the principles of Business and Human Rights to hold businesses accountable for the killings of EHRDs.

(Henri Tiphagne is a human rights advocate based in Madurai, Executive Director of People's Watch and National Working Secretary of Human Rights Defenders Alert - India.

Ashish Reddy is an advocate and researcher at Human Rights Defenders Alert - India.)

BROKEN SIGNALS: INDIA'S HEATWAVE WARNINGS ARE MISSING THE MARK

SOUMYA DUTTA

India's heatwave alert system often fails to reflect real ground conditions or reach those most at risk. As temperatures rise, millions are left without timely, actionable warnings.

In the summer of 2016 in Indore, Kusumlata Devi (name changed), an elderly informal waste worker, was at her usual work of

collecting metal and plastics wastes from the top of the garbage dump, items that she sells to the small-scale recyclers to earn a living.

Her half-torn woven polythene bag was less than half full and she was not happy. That day's collection will not give her enough money. She was feeling

a little hot, dizzy and then things went blank.

The next thing she saw was the ragtag bed she was lying on in her jhuggi (informal settlement), surrounded by family members. Once she recovered a little, she was told that she passed out, probably out of heat exhaustion, and was rescued and carried back by fellow (informal) waste

workers. Her life was saved that day by quick action of fellow workers, with no assistance from the system.

In the summer of 2023, which broke all previous records of being the hottest year on instrumental record (till that was broken in 2024), Manjar Alam (name changed) was working as a mason in a building site in Delhi. It was a very hot and humid day, and he had not received any information of a heatwave declaration. This is per usual, because heat and other climate warnings barely, if ever reach workers.

As he felt unwell working in this oppressive heat, he came home early and asked his wife for food. As he sat down to eat, he fell flat, never to get up again.

His was another life lost to the fast-rising heat impact, to become another number to the statistics.

Both these examples are an illustration to the fact that while urban poor and informal workers are the populations most at risk for adverse impacts of heat such as heat stress, exhaustion or heat stroke, the Indian Meteorological Department's readings fail to accurately assess their risk for health impact and their warnings fail to reach them. These stories ask us the question; how do we centre the needs of the most vulnerable while designing an effective disaster warning system?

The Rising Threat to Humanity

In the 21st century, the 'Climate crisis' has become one of the biggest challenges facing

humanity, with no 'relief' in sight which has led to the sharp increase in temperatures and the threat levels to all vulnerable communities globally.

With the weak climate pledges from governments, the global annual mean temperature is set to rise about 2.9 C above pre-industrial era by the end of the century. The year 2024 was about 1.58 C warmer than the pre-industrial average temperature (which was the average global annual mean temperature of the years between 1850-1900). Sadly, despite facing an advancing climate catastrophe, the global Greenhouse Gas emissions have kept rising even after the over-hyped Paris Climate Change Agreement (PA) of 2015.

The Indian Subcontinent is Burning Up

The Indian subcontinent has been particularly affected by the rise in global temperature due to its proximity to the equator. Though records show a less-than-global-average temperature-rise over the Indian landmass as a whole, the days when both maximum temperature and max relative humidity spikes, are on the rise. There are both direct and indirect impacts of heat and humidity. The direct impacts of heat on India currently includes - significant crop losses which contribute to malnutrition (and even stunting in children), power shortages which also affect the manufacturing sector and increased water scarcity all of which impacts the economy and leads to significant GDP loss.

Furthermore, heat is also causing

indirect climate related impacts in the oceans surrounding India.

A comprehensive assessment of climate change impacts and trends over the Indian region, by India's Ministry of Earth Sciences published in 2020, shows a scary scenario. The projection shows that in the coming decades both extreme precipitation and extreme heat incidents will worsen. This report also showed how coastal cities and towns are now facing more frequent and more intense tropical storms and cyclones, driven by higher sea surface temperatures in both the Bay of Bengal and the Arabian Sea which only stands to worsen.

Vulnerable Populations

A quick look at the temperature map of India above reveals that due to its geography, the areas most affected by heat appear to be located in the North-West regions and Indo Gangetic plain. This is also the area where there is a higher population density and higher prevalence of poverty, both of which adversely affect the ability of the people to effectively deal with and recover from heat.

And when the average temperatures become high, urban areas suffer from even higher temperatures, not least because of the Urban Heat-Island (UHI) Effect, which keeps congested areas temperatures about 4 to 6 C higher than surrounding open areas.

Further it is important to note that heat and its impacts are disproportionate. Statistics say that the urban poor and informal work sector consisting of people who do demanding physical work such as construction workers,

rickshaw pullers, farm workers, domestic helps, sanitation workers, street vendors etc are affected more by the heat. (Nivarana published a story by Sanskar Gupta on the impact of heat on unorganised settlements in Bhopal [here](#))

After exhausting days working in extreme heat, many labourers return to cramped, poorly ventilated homes that offer no relief—only more heat and humidity. With no formal plans or advisories to address indoor heat stress, the health risks quietly intensify over time.

Though the Government of India does not keep a regular heat impact related death record, some studies have shown that well over 24,000 deaths took place between 1992 and 2015, with 'Heatwatch' recording 733 heat deaths in 2024.

These numbers and figures reveal that there are vulnerable populations in India who are adversely impacted by heat who might benefit from receiving appropriate alerts about possible heatwaves. However, we need to critically examine whether the current system of heatwave alerts accurately represents the ground data on temperature and whether they appropriately reach the correct populations.

Heat Metrics of Relevance

In India, the India Meteorology Department IMD determines and announces if and when a heatwave condition has started in any place and time. The IMD determines heatwaves by using either a temperature cut off for the maximum temperature recorded in a day or for how

hotter is the maximum temperature compared to the normal temperature of that area.

IMD Criteria for Declaring Heatwaves in India

- Departure from Normal: Maximum temperature is $\geq 4.5^{\circ}\text{C}$ above normal and actual maximum temperature is $\geq 37^{\circ}\text{C}$.
- Heatwave: Maximum temperature reaches or exceeds:— 40°C for plains— 30°C for hills— 37°C for coastal areas.
- Severe Heatwave: Either: — Departure from normal is $\geq 6.5^{\circ}\text{C}$ (significantly above normal) OR— Actual maximum temperature is $\geq 45^{\circ}\text{C}$.

It also uses a metric known as 'Heatwave Days', this is defined as the number of days in a particular location where the maximum recorded temperature has crossed the threshold for declaring a heatwave.

In March 2025, the India Meteorological Department IMD said that the number of heatwave days might double this year as compared to 2024, which was already a bad year with a record breaking 554 heatwave days. This rising trend is visible already.

Another heat metric of importance is the heat index. Heat index which is also known as the apparent temperature combines the metrics of measured temperature with the humidity in a location. This indicates what the heat feels like to a human body. Because the human body when exposed to heat cools itself by sweating and

humidity in an area reduces that capacity - a more humid area will have a higher heat index which will then indicate that more harm to the human body is possible.

Gaps in The Current Heatwave Warning System

Given the background of the harmful impacts of heat and the populations it affects, there are three clear reasons why the present IMD heat warning system is inadequate

Firstly, the Indian Meteorological Department (IMD) weather monitoring stations are often few and widely spaced, and they are typically located in cooler, shaded, or less densely populated areas—such as airports or research campuses. However, the environmental conditions experienced by working-class people—who are usually outdoors or in poorly ventilated, crowded areas—are significantly different and often far more severe. Due to the Urban Heat Island (UHI) effect, where built-up city areas retain more heat, and higher exposure to air pollution and humidity, the actual "felt" temperature in these localities can be much higher.

As a result, IMD stations may underreport the true heat stress conditions in urban centres. For example, the IMD station in Guwahati is located at the city's airport, approximately 25–30 km away from the densely populated city centre. This station is situated in a relatively open, green, and less congested area. Consequently, the temperatures it records are unlikely to reflect the real conditions in the heart of Guwahati, where overcrowding, inadequate infrastructure, and

trapped heat exacerbate the thermal burden on residents.

Heat-related health impacts are highly context-dependent—they depend not just on ambient air temperature, but also on humidity, air quality, crowding, access to shade, water, and ventilation. Relying solely on IMD station data may mask the intensity of exposure faced by vulnerable populations, leading to delays in issuing heatwave alerts and insufficient public health responses.

The standard temperature recorded by IMD and other weather agencies—known as the 2-meter air temperature—is taken in shaded, ventilated conditions about two meters above the ground. While useful for consistency, it often grossly underestimates the actual heat experienced by people working at or near ground level.

Surfaces like asphalt, tin roofs, and concrete structures can become significantly hotter under direct sunlight, often reaching 50–65°C even when the 2-meter air temperature reads 38–40°C.

This disparity is especially dangerous for informal workers such as construction laborers, street vendors, and waste pickers who operate directly in these environments. By relying on cooler, shaded air temperatures rather than real surface heat exposure, official heat warnings fail to reflect the true risk on the ground—putting the most vulnerable populations at even greater peril.

The second critical issue is the underuse of the Heat Index—a far more accurate predictor of

heat-related health risks than temperature alone.

While the IMD often shares relative humidity and a “feels like” temperature, it stops short of issuing formal Heat Index warnings that factor in both temperature and humidity.

This is a dangerous gap, especially in tropical and coastal regions where high humidity prevents sweat from evaporating efficiently, crippling the body’s ability to cool itself.

At extreme levels of humidity, this can lead to Wet Bulb Temperatures of 35°C or more—a threshold beyond which even healthy individuals can suffer heat stroke or die within hours. These conditions are no longer rare; climate models predict they will become increasingly common. Yet it is a blind spot in the warning systems that continues to go unaddressed.

Moreover, these alerts, available on smartphones and in the English language, cannot be comprehended by most of the informal workers who need to be the primary targets of such an alert. This exclusion also requires better measures to reach the workers such as, automated phone calls which give the information in the local language and non-technology centred ways of announcements.

And finally, the advisories that the government issues when IMD announces a heat-wave condition, is inadequate to deal with the problems.

The suggestion to not go out is impractical as most workers live on a daily wage basis which

places them in severe economic stress. A better option would be to compensate them for the loss of working days due to heat impact.

In high temperature and high humidity conditions, the common advice to “drink plenty of water” is dangerously inadequate. When humidity is high, the body’s primary cooling mechanism—evaporation of sweat—becomes ineffective, meaning internal temperatures can rise rapidly even if one is well-hydrated.

These conditions place immense strain on the heart and kidneys, and if someone begins to suffer heat stress or heatstroke, what they urgently need is external cooling, not just fluids.

Saving lives in such scenarios requires physical infrastructure—such as well-ventilated emergency cooling rooms or shelters with fans, misting systems, or air-conditioning—especially in densely populated, high-risk areas like slums, construction sites, and markets. Yet most Indian cities lack such life-saving measures in their Heat Action Plans, leaving millions dangerously exposed.

Rethinking Heat Alert and Warning Systems

As India is facing longer, hotter, and more dangerous summers, yet its current heat warning system is plagued by critical blind spots that fail to protect vulnerable populations like Kusumlata and Manjar.

To save lives, the warning system must be fundamentally reimaged.

This includes installing a dense network of temperature and humidity sensors in urban slums and other high-risk areas and using real-time Heat Index and Wet Bulb temperature readings to assess actual danger rather than relying solely on raw temperature data.

Alerts must be communicated in local languages through accessible channels such as voice messages, FM radio, and community volunteers.

Crucially, economic safeguards

like heat allowances or wage compensation should support workers who cannot safely work during extreme heat. Additionally, investment in cooling infrastructure—such as emergency cooling centers in densely populated low-income neighborhoods—is urgently needed.

As climate change intensifies, heatwaves are no longer minor weather events but slow-motion mass-casualty disasters. Without evolving our warning and response systems, lives will be

lost not because the danger was unseen, but because we refused to recognize it where it truly matters.

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(Soumya Dutta is a people's science activist leader who is extensively engaged with a range of climate, change and ecological issues.)

GRASSROOT RESILIENCE: A DECADE-LONG BATTLE TO PROTECT HASDEO ARANYA'S BIODIVERSE RICHES

CHATTISGARH BACHAO ANDOLAN

Central India's pristine, dense, biodiversity-rich forests, the Hasdeo Aranya, popularly known as the 'Lungs of Chhattisgarh,' cover an area of 187,800 hectares and are among the largest intact dense forests in the region. The Hasdeo Aranya is home to over 450 species of flora and fauna, including more than 25 species of endangered mammals, over 70 species of reptiles, and 100 species of birds. It encompasses the habitats of endangered elephants, sloth bears, and leopards and is home to critical water resources, such as perennial river bodies. Additionally, it serves as the catchment of the Hasdeo river and watershed of the Hasdeo Bango reservoir that is critical for the irrigation of 400,000 hectares of cropland in the 'rice-bowl' state of Chhattisgarh.

The region faces imminent threat of destruction due to coal mining. The Indian government has identified 23 coal blocks in this forest region. In 2010, Hasdeo

Aranya was declared to be an entirely 'No-Go' area based on a joint study of the Ministry of Coal and Ministry of Environment and Forest, in which less than 10% of India's coal-bearing areas were deemed as 'out of bounds' for mining. Even after multiple policy revisions, the large majority of Hasdeo Aranya is still deemed 'inviolable.' Nonetheless, new mines are being opened in violation of the policy and other Ministry regulations. There are two operational coal blocks, namely Chotia and Parsa East Kete Basan. The National Green Tribunal (the quasi-judicial body for adjudicating environmental violations) had canceled the green clearance for Parsa East Kete Basan in 2014, but mining continued as the issue remained sub-judice at the Supreme Court of India. This mining project is being run by one of India's most powerful conglomerates, Adani.

Gram sabhas (village councils for local self-governance) have waged a decade-long struggle to

protect their forests. Over twenty gram sabhas have united to form a community-based grassroots movement that is resisting the destruction of the forests. The movement is also battling the corporate greed that threatens to disrupt this critical ecosystem, which has been conserved for centuries by the communities who have relied on it for their survival. Local tribal communities have valiantly defended their forests, critically securing their life, livelihood, and cultural identity.

The Indian constitution accords special rights to indigenous communities to safeguard their cultural and natural heritage including the right to a 'free prior informed consent' for mining. In 2014, the gram sabhas of Hasdeo passed a resolution against mining even before any new mine was allotted. Yet, five mines were allotted in 2015 disregarding the opinion of tribal communities. However, the local on-ground resistance prevented

operationalization of these new mines. In 2018, there were four unsuccessful attempts by the mining company to obtain a favorable gram sabha resolution, but none was successful. To bypass this stalemate a fake gram sabha resolution was prepared, which formed the basis of clearances for operations to commence in a new mining project, Parsa. This fake resolution had multiple discrepancies, including having signatures of deceased individuals and tampered signatures.

Subsequently, for over 900 days, tribal communities have embarked on an indefinite sit-in protest demanding an enquiry into the fake gram sabha resolution and cancellation of all clearances on the basis of this forged gram sabha document. The protest site was set ablaze in March 2024. But the villagers rebuilt the site through collective efforts and continue to raise their voices against the blatant violation of the law. The local leaders of the movement are facing threats of police detention and intimidation subject to a criminal investigation launched against them by mining company officials, in an effort to trample the movement and the villagers' voices.

In 2021, villagers from 20 villages of Hasdeo undertook a 300 km march on foot to the state capital to assert their constitutional rights and dignity against the powerful mining corporation. Still today, they are using every method available to make their voices heard, including through foot marches, fasts, and sit-in protests. The villagers have knocked on many doors, written

innumerable petitions to various local, state, and national level authorities and ministries, and reached out to Courts to voice their concerns.

Acknowledging the decade-long resistance struggle and the ecological importance of the region, a large portion of Hasdeo Aranya was declared to be an elephant reserve in October 2021. This declaration has saved 445,000 acres of forest from mining. In July 2022, the Chhattisgarh legislative assembly also passed a unanimous all-party resolution declaring its intent that there should be no fresh mining in any part of Hasdeo Aranya. However, the victory for the movement was only partial. Three coal blocks – Parsa, Parsa East Kete Basen, Kete Extension – all allocated for mining by Adani, have been kept outside of the elephant reserve boundaries. According to local reports, there are fresh plans to around a million trees in the next few months to make way for these new coal mines. The government clearances given to these mines – despite the lack of gram sabha consent and in contravention of existing environmental policies and due processes – have already been

challenged in various courts. Nonetheless, delayed judicial processes have become a convenient pretext for expanding mining operations as the courts deliberate.

In the latter half of 2024, 11,000 trees have already been felled for expansion of the Parsa East Kete Basen mine in the presence of a massive deployment of police. The brutal felling of trees in Hasdeo Aranya is nothing short of an environmental crime and an unforgivable betrayal of our collective heritage. This violation is also a massive setback in the global fight against climate change and for ecological justice.

The renewed deforestation in Hasdeo has also been met with spontaneous protests across Chhattisgarh state, including innovative campaigns like depicting the plight of Hasdeo in the cultural festivals and schools. Yet, more efforts are needed across India and the world to stand in solidarity with the local communities trying to save Hasdeo Aranya forests, and our collective future. By coming together in solidarity, people can create a powerful force to protect Hasdeo Aranya.

PROTECTION OF THE ARAVALLI RANGE IS CRITICAL

KAILASH MEENA, ACTIVIST, FOR PEOPLE OF ARAVALLIS

If you were an alien or a space traveller some three billion years ago, the only discernible feature you would have seen which defined the northern margins of the landmass we call India would have been the Aravalli Mountain range. The 1800-million-year-old Aravalli ecosystem comprising some of the oldest geological features on the planet holds the distinction of being one of the

oldest mountain ranges on Earth with its origins dating back to the Proterozoic Era.

The Aravalli range supports forests, water bodies, wildlife, famous forts, temples and archaeological cave paintings of historical importance. The landscape of the Aravallis, its geology, geography, forests, soils and water have defined the history, culture and environment

of North-West India for eons and remains an integral part of the future of this region as this range has a pronounced impact on the biodiversity, micro-climate, air quality and the hydrological status of this entire belt. But the Aravallis now struggle to survive the greed, pettiness and the extreme short-sightedness of politicians and corporations.

The Aravalli Mountain System is under highly stressed conditions due to anthropogenic activities, and it needs urgent attention to save our country's ecological and geological heritage. Recent scientific studies/research have exposed the severe unrepairable environmental damages that have taken place due to ongoing land use changes in the Aravallis. The studies reveal that the continuous destruction of these fragile hill ecosystem is causing significant irreversible biodiversity losses, land /soil degradation and a decline in vegetation cover.

The Aravalli Range extends for over 692 km starting in Gujarat and passes through Rajasthan and Haryana on its way to Delhi and acts as a natural barrier preventing the Thar Desert's westwards expansion towards the Gangetic plains and influences the climate and biodiversity of Northwest India. 12 breaches in the Aravallis have opened up extending from Ajmer to Jhunjhunu in Rajasthan and the Mahendragarh district in Haryana from which more dust from the Thar desert is blowing into Delhi-NCR. India's National Capital Region and Northwest India will become a desert if the Aravallis are not preserved. This

demands an immediate urgent need for comprehensive conservation and protection strategies to stop these damaging trends.

Aravalli hills also act as a critical water recharge zone for entire Northwest India from where they pass. With their natural cracks and fissures, the hills have the potential to put 2 million litres of water per hectare in the ground every year. The groundwater aquifers under the Aravalli hills hold immense quantities of water and act to release it slowly. These aquifers are interconnected and any disturbance or alterations in the pattern can significantly alter the groundwater table. Natural ecosystem of the Aravallis are a critical wildlife habitat & corridor and a biodiversity hotspot with 400+ species of native trees, shrubs, grasses and herbs; 200+ native & migratory bird species, 100+ butterfly species, 20+ reptile species and 20+ mammal species including leopards, hyenas, jackals, neelgais, porcupines, mongoose, civet cats as well as other wildlife like insects, amphibians etc.

(Full article and other press statements have been published on our website at pucl.org/bulletins.)

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Regd. Office :

332, Ground Floor, Patparganj
 Opp. Anandlok Apartments
 Mayur Vihar-I, Delhi-110091
E-mail : puclnat@gmail.com
pucl.natgensec@gmail.com
Website : www.pucl.org

PUCL BULLETIN

Editor: V. Suresh
Editorial Board: Anant Bhatnagar, Arvind Narrain, Bhanwar Meghwanshi, Geeta Seshu, Kavita Srivastava, Lara Jesani, Seema Azad, Aishwarya
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