

Aaranyak

Nourishing nature to secure our future



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Volume 06
Issue 01

June 2026
Pages 60

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Aaranyak

ABOUT AARANYAK

Aaranyak is registered society working towards nature conservation in Northeast India, since 1989. Our strength lies in applied research in biological and social fields and our thrust area of work is the Northeastern India and Eastern Himalayas.

MISSION

Our mission is to foster conservation of biodiversity in Northeast India through research, environment education, capacity building and advocacy for legal and policy reform to usher a new era of ecological security.

Know more about us at

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Credit: Avijan Saha

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COEXISTENCE BY DESIGN

The escalating human elephant conflict (HEC) is plaguing life and livelihoods in many parts of Assam and the rest of Northeast India. Sustained mitigation efforts undertaken in the hotspots have tasted success in varied ranges depending on various local level factors including drivers of the problem.

A scientific and coordinated intervention involving the community in Lakhipur Revenue Circle of Goalpara district of Assam has achieved a life changing impact on a sizeable population that till recently had been reeling under the raging HEC in the landscape. With death on the prowl after sunset, their life was a symbol of agony and anxiety till the Goalpara Forest Division of Assam Forest Department stepped in to secure lives and livelihood for this traumatised population. Aaranyak was engaged by the Forest Department in the forefront of implementing the HEC mitigation project in January 2024 to facilitate coexistence between villagers and the wild elephant herds.

The result is now there in the ground for all to see. Human deaths have declined sharply in the Lakhipur hotspot of HEC. According to the data available, number of human deaths due to HEC in Lakhipur located close to Assam-Meghalaya boundary, came down to only two in the year 2025 from 19 deaths in 2022 because of the persistent mitigation efforts put up by the Forest Department in collaboration with Aaranyak and with community support.

According to the Range officer of Lakhipur Forest Range Moupran Gayon, the ongoing efforts for HEC mitigation in the Range with cooperation from Aaranyak, highlighted how mitigation tools like solar-powered fences, solar street lights installed in select HEC-prone areas; rechargeable torchlights provided to volunteers with cooperation from Aaranyak, have been instrumental in reducing direct interface between humans and wild elephants of late leading to decline in human casualties.

So far, the Forest Department through Aaranyak has installed about 47 km of solar-powered fence securing at least 18 HEC prone villages in Lakhipur Circle benefitting about 1440 households.

Volunteers of Elephant Conservation Networks (ECN) promoted by Aaranyak and Gaja Mitras engaged by Assam Forest Department too have contributed extensively in reducing the conflict in the area. At least 70 ECN volunteers and 40 Gaja Mitras are working in close coordination with Forest Department staff in Lakhipur Range for facilitating peaceful human-elephant coexistence.

The ECN comprises volunteers networked through WhatsApp, who raise early alarm for neighbouring areas as soon as wild elephants are sighted in their respective localities.



The Circle Officer of Lakhipur Revenue Circle, Sailen Dutta Das while lauding this collaborative HEC mitigation efforts recently asked all other concerned government departments working in the revenue circle -- APDCL, Veterinary Department , Agriculture Department , Social Welfare Department, Education Department, Soil Conservation Department, Police Department, Health and Family Welfare Department, Forest Department, DDMA, Panchayat and Rural Development Department -- to contribute towards the HEC mitigation through action-driven efforts to maintain this declining trend of human deaths and facilitate coexistence.

He said the civil administration would take stock of the action taken by the concerned departments in this regard in October this year. Representatives of these concerned government departments assured to provide necessary support as required for HEC mitigation.

The Lakhipur experience is an instance of how sustained coordination among concerned government departments, involvement of trained community volunteers and judicious use of technology and gadgets can be utilised to design area-specific HEC mitigation strategy based on local drivers of the problem.

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PYGMY HOGS CONSERVATION EFFORTS ACHIEVE ANOTHER LANDMARK RELEASE IN MANAS GRASSLAND

-Aaranyak Feature

It was another landmark day on June 7, 2026 for Pygmy Hog Conservation Programme (PHCP) when 15 captive-bred pygmy hogs – nine females and six males - were successfully released in Kuribeel grasslands of Manas National Park under the programme implemented under the aegis of Assam Forest Department.

The Pygmy hog (*Porcula salvania*) is the world's smallest and rarest wild pig, which has sadly been threatened with extinction.

It is heartening to learn that over the next five years, the PHCP plans to release around 80 Pygmy hogs, with the goal of rebuilding a thriving wild population of approximately 300 animals by 2040.

Thirty years ago, in 1996, six Pygmy hogs were taken from this very site (Kuribeel grassland) into captivity to establish an insurance population toward off extinction. As the species gradually disappeared from this landscape, the Pygmy hog Conservation Programme has spent the last eight years restoring its grassland habitat with the Assam Forest Department, and communities and Forest department strengthening protection measures.

This happened to be the sixth release of Pygmy hogs into Manas National Park since 2020, which takes the total number of the endangered species released by the programme up to 78.



A captive-bred pygmy hog returns to the wild. Photo- PHCP

This release marks a true homecoming for the Pygmy hog. The founder population for the conservation breeding programme was originally captured from the Kuribeel grasslands of the Bansbari Range in Manas, where these animals have now been reintroduced. With no confirmed signs of Pygmy hogs in Kuribeel for the past nine years, this release represents a significant milestone in the recovery of the species and the restoration of its historical range.

The Pygmy Hog Conservation Programme (PHCP), a collaborative initiative involving the Assam Forest Department, Durrell Wildlife Conservation Trust, the IUCN SSC Wild Pig Specialist Group and Ecosystems-India, with Aaranyak as a key implementation partner, has been instrumental in rescuing the critically endangered pygmy hog from the brink of extinction after the species was feared extinct during the 1970s.



*Installing camera traps to monitor the elusive Pygmy hog.
Photo- Dr. Parag Deka*

In 2025, PHCP signed a new Memorandum of Understanding (MoU) with Durrell Wildlife Conservation Trust, the Assam Forest Department, IUCN SSC Wild Pig Specialist Group, Aaranyak, and Ecosystems-India to further strengthen collaborative conservation efforts for the species.

The PHCP has so far successfully bred and reintroduced 194 hogs in Assam, India, which, and happy to report, for the first time since the reintroduction programme began, may now be outnumbered by their current global wild population.

Background

In 2025, PHCP signed a new Memorandum of Understanding (MoU) with Durrell Wildlife Conservation Trust, the Assam Forest Department, IUCN SSC Wild Pig Specialist Group, Aaranyak, and Ecosystems-India to further strengthen collaborative conservation efforts for the species.

The PHCP has so far successfully bred and reintroduced 194 hogs in Assam, India, which, and happy to report, for the first time since the reintroduction programme began, may now be outnumbered by their current global wild population.

The Pygmy Hog Conservation Programme (PHCP) started its work in 1996 when two males and two females were captured from the Bansbari Range of Manas National Park. The reintroduction of captive-bred hogs to the wild began in 2008. Prior to releases in Manas National Park, the PHCP selected other appropriate grasslands in Assam for reintroductions of the pygmy hog.

The PHCP has successfully re-established a wild Pygmy hog population in Orang National Park of Assam through the release of 59 captive-bred individuals. The Park is located approximately 120km southeast of Manas National Park, on the north bank of the Brahmaputra. Today, the population is estimated at around 200 hogs and is believed to consist entirely of wild-born animals, marking a significant conservation achievement.

The Pygmy hog remains under significant threat from the loss of its grassland habitat due to invasive alien plant species, woody encroachment, and human disturbance.

Manas National Park and Tiger Reserve harbours some of the largest and most ecologically significant grassland landscapes remaining in the sub-Himalayan region. These grasslands are not only vital for biodiversity conservation but also serve as natural water reservoirs, playing a crucial role in sustaining the long-term water security and livelihoods of farming communities living around the park.

The ecological importance of these grasslands stems from the fact that these provide indispensable habitat for a range of specialized wildlife, including the highly endangered Pygmy Hog. As one of the world's rarest mammals and a species listed as Endangered on the IUCN Red List, the future of the Pygmy Hog is intrinsically linked to the health and extent of these grassland ecosystems.

The success of ongoing conservation and reintroduction efforts depends on scientifically managed grasslands, regular habitat restoration, and the maintenance of natural ecological processes that sustain this unique landscape and its wildlife.



Release of a Pygmy hog. Photo- PHCP

According to Dr. Goutam Narayan, Advisor, Pygmy Hog Conservation Programme (PHCP), June 7 release marks the culmination of nearly three decades of conservation effort, with the pygmy hog returning to its ancestral grasslands after a remarkable journey through conservation breeding, habitat restoration, and reintroduction to the wild.

Dr. Bibhuti Prasad Lahkar, Deputy Executive Director of Aaranyak, stated that the organisation would continue its role as a conservation partner in the Pygmy Hog Conservation Programme. Emphasis on grassland habitat restoration by programme stakeholders was highlighted as an important step for the conservation of pygmy hogs and other grassland-dependent species.

According to PHCP Field Scientist Dr. Dhritiman Das, sustaining pygmy hog populations in Manas requires functional grassland management integrated with long-term monitoring to assess population trends, ecological dynamics, and reintroduction success.

Dr. Parag Jyoti Deka, Director of the Pygmy Hog Conservation Programme, stated that the continued release and monitoring of captive-bred pygmy hogs represent an important step toward establishing a self-sustaining population in restored grassland habitats.

He noted that, as part of its rewilding strategy, PHCP will continue to maintain a small captive population of around 80 pygmy hogs at its two conservation breeding centres in Assam and breed additional individuals for future releases. He further added that post-release monitoring strategies are being continuously strengthened, with the current release involving camera-trap and sign surveys along with a radio-telemetry tracking of five pygmy hogs to assess their behaviour, survival, and habitat use after reintroduction.

In 1995, Durrell Wildlife Conservation Trust, Jersey, UK partnered with Forest Department, Government of Assam, IUCN, Wild Pig Specialist Group and Ministry of Environment, Forest and Climate changes, Govt. of India formed Pygmy Hog Conservation Programme (PHCP). The project is currently being implemented in the country with the PHCP's key partner, Aaranyak.

Until 2018, the PHCP was guided by the IUCN Species Action Plan (SAP) 1993, prepared by the WPSG. The revised SAP has been enacted with a long-term vision till 2030. The PHCP is guided by Durrell's 'Rewild Our World' strategy with two plans which map out the programme until 2025, one for habitat and community activities in Manas NP and the second for the pygmy hog captive breeding and reintroduction programme. To achieve the programme's vision of restoring pygmy hog populations in the wild and protecting their grassland habitat for the benefit of all threatened species and local communities, this plan is being implemented.



Painting Pygmy hogs and grassland ecosystems on school walls in the fringe villages of Manas. Photo- PHCP

The pygmy hog

The Pygmy hog (*Porcula salvania*) is the world's smallest and rarest wild pig, most threatened by extinction. It belongs to a unique genus that has no close relatives. It stands about 25 cm from the ground and weighs 6 to 9 kg. It differs from young wild boars in having a rudimentary tail (2-3 cm) and more spindle-shaped body (hence its Assamese and Bodo names Takuri Bora and Oma Thakri; the more commonly used Nal Gahori is a misnomer as it does not prefer the Nal or Phragmites grass). It lives in small (4-8) groups that construct thatch 'houses' (nests) to live in, not just to farrow like other pigs.

The species was originally found in the narrow belt of tall alluvial grasslands that runs across the southern edge of the Himalayas in the Indian subcontinent.

Tall alluvial grass habitats, being very rich in nutrients, are highly suitable for cultivation and, therefore, came under significant pressures from expanding human populations, agriculture and uncontrolled harvesting, all of which caused the disappearance of this highly sensitive species. Currently, the Pygmy hog faces several major threats, including grassland degradation caused by indiscriminate burning, the spread of invasive alien plant species, woody vegetation encroachment, disease outbreaks such as African Swine Fever, and human encroachment.

The grassland is also used extensively by rhinos, elephants, tigers, hog deer and several small animals, such as endangered turtles. The project to save pygmy hogs also gives us an opportunity to address the larger question about the conservation and management of one of India's most biodiversity-rich habitats. These wet grasslands also help maintain the region's long-term ecological and economic well-being as they serve as a buffer against floods in the rainy season while maintaining high groundwater levels in the dry season, indirectly benefiting farming communities living in the fringe areas.



FROM ROADKILL TO CANOPY CROSSINGS: HOW LOCAL GRIEF ENGINEERED A LIFELINE FOR ASSAM'S ENDANGERED LANGUR



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There is a stretch of National Highway No. 117 in western Assam where the rumble of speeding vehicles once drowned out the calls of a disappearing primate. Today, if you drive slowly between Kakojana and Tulungia in Bongaigaon district, and if you are lucky, you may look up and see something extraordinary: a troop of golden langurs crossing the road without ever touching the asphalt. They move along a slender bridge of insulated wire, suspended between two electric poles, as calmly as if they had invented it themselves. This is the story of how a dead langur, a grieving village, a few local conservationists, and a few government officials who listened wrote a new chapter in Indian conservation.

The golden langur (*Trachopithecus geei*), popularly known as Sonali Bandor is a creature of rare beauty, found nowhere else on earth except the forests of western Assam and Bhutan. Its golden coat, black face, and long white-tipped tail make it unmistakable. For centuries, it lived in the dense canopies of Kakojana Reserved Forest, an eighteen-square-kilometer patch of green surrounded by fifteen villages in Bongaigaon district. The Aie River flows to the east, and National Highway No. 117 runs between the forest and the river, slicing through a landscape that once belonged entirely to the langurs.

But the forest has suffered. Historical logging, encroachment, and the political turbulence of the 1980s stripped away much of the canopy. With fewer food plants inside the reserve, the langurs began doing something they had never done before. They stepped out of the jungle and into the home gardens of nearby villages—Tulungia, Kakojana, Sidalsati, Sesapani, Garugaon, Hapachara, Kuchiakata, and Sarakola. To move between patches of food, they had to cross the national highway.

For a while, they managed safely, using specific corridors where large trees on both sides of the road touched each other overhead, forming natural bridges. But when the old National Highway 31 was widened into four-lane NH 117, those trees were felled. The langurs kept crossing at the same spots, out of habit and necessity. Now, however, there was no canopy above them—only speeding traffic.

The accidents began to mount. According to available records, from April 2020 to January 2025, ten golden langurs died under the wheels of vehicles on this single stretch of road. Nine were adults; five of them were potential mothers. One was an infant. Each death was a small extinction in itself.



Every roadkill is a silent tragedy for wildlife

Then came the morning of 4th January 2025.

A female golden langur was struck by a speeding vehicle. By 8:30 AM, the news had spread. Local conservationists, NGO volunteers, young men and women from the village, media persons, and ordinary shopkeepers gathered at the spot. They did not come with stones or slogans of anger. They came with grief. They stood around the langur's body and blocked the highway. For two hours, traffic came to a halt. And there, on the asphalt, the villagers held a public mourning for a monkey.

It was an unusual sight, even for Assam, where people share a deep bond with nature. But what happened next was even more unusual. The administration did not send police to clear the road. Instead, the District Commissioner arrived, along with the Superintendent of Police. Officers from the National Highways & Infrastructure Development Corporation Limited (NHIDCL) came. The Divisional Forest Officer was there, as was the District Transport Officer. They did not stand at a distance. They stood with the public, looking at the dead langur.

By noon, a public meeting was underway in a nearby classroom at Kakoijana Soulmari LP School. No microphones, no podiums—just people sitting on school benches, deciding what to do. The decisions that emerged that day were remarkably clear and practical. The administration agreed to install five artificial canopy bridges at the very corridors where langurs had always crossed. Forest guards would patrol the highway during daytime. Speed breakers and water drums would slow down vehicles. Signboards would warn drivers. And the forest department would plant langur food plants inside the reserve, so the animals would have less reason to leave.

Five days later, on 9th January 2025, the first canopy bridge went up. It was a simple thing: a ladder-like bridge made of insulated electric wire, strung tightly between two long electric poles on either side of the highway, then attached to nearby branches of big trees. No grand engineering, no expensive materials. Just a ladder bridge in the sky.

Nobody knew if the langurs would use it. They are cautious animals, suspicious of anything new. For five days, the wire hung empty while vehicles roared below.

Then, on 14th January 2025, the villagers saw something that made them catch their breath. A troop of golden langurs approached the highway. They stopped at the edge. They looked at the bridge. One of them—likely the alpha female—stepped onto it. The bridge swayed slightly. She paused, then took another step. Behind her, the rest of the troop followed. One by one, they crossed the highway without ever coming close to the traffic below. This is believed to be the first recorded instance of golden langurs using a man-made canopy bridge anywhere in the world.

Today, all five bridges are in place. The langurs use them regularly whenever they need to move between the forest and the village gardens. Daytime patrolling continues. Speed breakers slow the traffic. And since that mournful morning of 4th January 2025, not a single golden langur has died on this stretch of highway.

It is important to name those who were actively engaged in the process. Government officials included: Sri Nabadeep Pathak (then DC, Bongaigaon), Mohan Lal Meena (then SP, Bongaigaon), Kahanindra Kalita (DFO, Aie Valley), local police officers, officers from the National Highways & Infrastructure Development Corporation Limited (NHIDCL), officials from Abhayapuri Forest Range, and officials of the Bongaigaon District Transport Office.

The villagers of Kakoijana, local conservationists, and media persons included: Harmohana Rabha (Aaranyak Member), Sanjib Ray, Bikram Ranjan Roy, Dharam Ranjan Roy (Aaranyak Member), Ankur Barman (Aaranyak Member), Kankan Bayan, Jyotisankar Choudhury, Late Hitesh Ray, and Ankur Jyoti Ray. These individuals labored without expecting or receiving a single rupee. They climbed poles, strung wires, and secured the bridges purely out of love for the golden langur and their land.

But roadkill was not the only killer.

Between 2012 and December 2024, fourteen golden langurs died by electrocution in the villages around Kakoijana. Thirteen of them were females. Open electric wires, strung haphazardly through the trees, had turned the village canopy into a death trap. Once again, local people raised their voices. Once again, the Bongaigaon district administration listened. The Assam Power Distribution Company Limited (APDCL) replaced almost all open wires with insulated ones. Transformers were given protective barriers. Today, electrocution deaths have almost stopped in these villages.

If the story ended here, it would be a perfect one. But conservation is never finished.

The golden langur population is growing. That is good news, but it brings a new challenge. The langurs are now moving into other nearby villages—places where canopy bridges have not been built and wires remain open.



Every crossing counts: Building safer pathways for wildlife

In December 2024 (prior to the bridge installation), an adult male langur was electrocuted in Sankarghola village, near the Bhairab Hill Reserved Forest. Similar close calls have been reported from the fringes of Malegarh Reserved Forest.

The lesson from Kakoijana is clear and urgent. When communities care and administrations respond, solutions can be simple, cheap, and immediate. A wire bridge costs little. Insulated wiring costs little. Speed breakers cost little. But their absence costs the life of a species that exists nowhere else on earth.

The golden langur has survived logging, encroachment, political instability, speeding cars, and naked wires. It has survived because the people of Tulungia, Kakoijana, Sidalsati, Sesapani, Garugaon, Hapachara, Kuchiakata, and Sarakola refused to look away. They blocked a highway not with anger, but with grief. And that grief built five bridges. The good news is that more bridges are planned in the near future.

Now, the question is whether the same grief—and the same determination—will reach Malegarh, Bhairab Hill, Bamungaon, and every other fragment of forest where the golden langur still clings to existence.

The wire is ready. The poles are standing. All that is needed is for the rest of us to care as much as a small group of people did on a January morning in 2025, standing on a highway, mourning a langur.



Mourning the loss of a Golden langur

Acknowledgements: The author acknowledges the contributions of local conservationists, the Forest Department, NHIDCL, APDCL, and the District Administration of Bongaigaon.

Dedication: This article is dedicated to the memory of the ten langurs who died on NH 117 before the bridges were built.

Declaration regarding data collection:

The author declares that all data presented in this article - including mortality records, langur behavior observations, and community testimonies - were collected personally through primary field research. No third-party data sources were used without verification.

COEXISTENCE CONNECT

*Interview with Tejas Mariswamy, IFS, Divisional Forest Officer, Goalpara Division, Assam Forest department
Interviewed by Bijay Sankar Bora, Publicity Secretary and Consultant, Aaranyak*

Bijay Sankar Bora (BSB)

Namaskar viewers welcome to another episode of Eco heroes. I am your host Bijay Sankar Bora. Today we have with us Indian Forest Service officer Mr. Tejas Mariswamy who is the DFO in Goalpara Division of Assam Forest department. As an Indian forest service officer, Mr. Mariswamy has been working relentlessly in this division with the community with various stakeholders and specially he has been focusing on mitigating the raising human elephant conflict in Goalpara district which has a long border with Garo hills area Meghalaya. Mr. Mariswamy, welcome to this interview and thank you for your time, giving us time for out of your busy schedule.

Tejas Mariswamy (TM)

Sure. Thank you. Thank you for having me here.

BSB

How long have you been posted in Goalpara?

TM

I joined almost exactly 3 years back, 2023 June I joined this division so by June it will be 3 years.

BSB

Goalpara is known forest specious biodiversity it is district has huge potential for agriculture and horticulture sector but all we know that because of raising human elephant conflict the people are facing a tremendous challenge in pursuing their daily life, pursuing their economic activities and all this tings. How as a divisional forest officer you have been trying to mitigate this thing. How has been the experience?



Goalpara as such it's a Garo hills Goalpara landscape. It's a greater Goalpara district. Where even the entire Garo hill's part was also part of its Goalpara district. It's a landscape as highly rich in biodiversity so it has the plain land and the hills from the Meghalaya side it has lot of good bird life also. We have a lot of good wetlands here so there is also very good populations of mega species, wild elephants here, they specifically belong to this section Garo hills Goalpara if you observe this landscape, elephants, generally do not cross Brahmaputra so you might have seen in Kaziranga landscape, they cross- they go towards north bank but over there they do not cross Brahmaputra generally, so they come down the hill so Goalpara is almost a destination for them. They come down from the Garo Hills, so they forage, they breed, they utilize the wetlands, and then move through a cyclical route between Goalpara, Kamrup, and the Garo Hills. It's a cycle.

There is a very unique set of population here, then of course since we have lot of increase in population and Goalpara also face a lot of encroachment issues, that's why the conflict is pretty high, one of the highest in the country. So as a department we are trying our best how to mitigate it. Mitigation we are adopted basically two strategies one is Long term which has to be the revival of the habitat which has to be the primary strategy for that under the leadership of our Hon'ble Chief Minister, our division has been able to recovered more than 10,000 hectares in the last three years and also our department we have a policy like it has been followed as highest level also whichever area is evicted, it should be immediately planted. It's not just about there is lot of illegal occupant's households which have been evicted that has to be revived. So those plantations have been taken up.

Those place, where we have done the eviction, there has been tremendous decrease in human elephant conflict. In fact, Lakhimpur is one of the range in Goalpara, so where we used to have around 12 deaths prior to this eviction human deaths and then were two elephant's deaths also. So last year we saw only around four deaths that also is like our target is to bring down to zero. Of course, the mitigation cannot be achieved through short term that has to be long term.

So, this revival of landscape is our primary strategy and within short term for example, the existing whatever conflict we are facing so that has to be reduces. So there has to be immediate some actions which has to be taken up. So, for that we have actually technically divided and segregated the conflicts. One is of course a form of farmland depredation. Second is of course household damage, loss of human life. So, we have divided these two and then we are adopting different strategy for it. Primarily our initial focus is on how to reduce the loss of human life and then damage of the households.

So, what we have observed is that in Goalpara we have around 100 plus forest areas and very small forest areas interspersed with lot of villages. So invariably wild elephants have to when they go from one forest area to another forest area, they cross human habitations and generally they cross through the farmland or like some other fellow land and in between where there are villages there are some opportunistic ways they go into the habitations and then there was some damages.

There is no solution if you completely block the path of the elephant. It's giving no solution. So only think is that is there a way where we can allow the elephants to pass through and then without blocking the corridor of the elephant or traditional path of the elephant, we can secure the household section. So initially, I think there were some fencing practices which were tried, so when I joined Goalpara, as a DFO, I first went to Lakhipur and I saw like Aaranyak developed one low-cost fencing. It was a simple bamboo fencing say bamboo pole single strand and around it costed much less than 80000 km otherwise if we are used concrete post it used coming lakhs it used to very high. Now we have mapped the conflict villages on an average approximately we are on 180 plus in all 4 ranges villages.

So, if we have a strategy where without blocking the elephant if we enclose the village the fencing also it's not about blocking the elephants it's all just about you know if there are 30 households, we are just covering, it's an exposure of that village. so, it's like the elephants have their path free they but then will avoid entering into the household. So, then we through like if there are so many village concrete post and big schemes will not be possible to scale. So low-cost methodology will be very easy so in that case we had submitted a proposal to government and Government is also very much steadfast on reducing human elephant conflict so under SOPD scheme there was a fencing proposal which was approved. So, we adopted same strategy we called initially both Aaranyak and WWF initially to be part of this project implementation where we could actually officially engage Aaranyak into it, so and then they like we were the department was funding the equipment Aaranyak was implementing it. It's not just about implementation; it's about like training. They were about training our staff as well as the local villages to manage it. So, like this way in last two years we have covered around 42 villages across 4 ranges in the district has been covered through the solar fencing and this has relatively given a very good result. In fact, like the fencing which were very old I thing 2 years old also even today is functioning very well and it is managed by the local people



DFO Tejas Mariswamy inaugurates and hands over a solar fence to community in Goalpara

Now what this has created like earlier when there used to be movement of elephant, so generally, people used to be on their feet they used to be little worried they could not sleep properly there used to be outside the home. In fact, they it was like elephant were also entering the habitat and people were also disturbing the elephants. It was like a difficult kind of thing. So, what we have observed when we have created this village exposures where villages surrounded by the fence. So, whenever the elephants come now the people know that they have to be inside the fence. So, there is no disturbance on elephants' path regular traditional path the interfaces reduce and people are able to sleep properly and elephant also. This is what trying to achieved, so our target is to probably touch all those 180 villages as far as possible. If the village is exactly coming in the elephant road that probably will not be possible to fence well have to adopt some other strategy but wherever its possible, we are trying to achieve that. So, this is what we are trying to do for minimizing the human life and loss of damage to households. Then again for regarding the other farmland depredation. The fencing is cannot be a solution there because generally elephant when they pass through those land like even if there is fencing it's like if it's it comes in the traditional path its not possible to hold it off so we were looking at increasing compensation and other factor and the good news recently came where government of India had approved even just say we have this Pradhan Mantri Fasal Bima Yojana (PMFBY).

Earlier elephant conflict was not part of the insurance and recently it's been approved that human wildlife conflict know farm depredation by elephant or like any wildlife is also considered under Bima Yojana and it's a very good scheme, I think, this is going to be if it can be adopted at scale like if it can be promoted make people to secure their crop this is going to help a lot because the insurance premium is hardly 100 rupees per person per hectare and its covers patty and they are paying around approximately 65000 to 70000 per hectare as an insurance.

BSB

It's a very good development because so many people have stopped farming stopped cultivation because of fearing depredation by the elephant. Now they can do that because they will get the compensation if it is just right!

TM

Exactly. Earlier there was also another problem that there in Assam there is something called an ideal system where I own the farm, I don't farm it like somebody else is farming it. So initially we had this issue of whom to give the compensation like we are depended on the farmland documents. Earlier it used to be like owner not the cultivator but under Pradhan Mantri Fasal Bima Yojana (PMFBY), there is a provision to compensate the actual cultivator. So, this is actually going to help a lot. In fact, we are now trying to you know, our staff is trying for identifying all the conflict villages and they are going to get them registered under this scheme. So, this is going to be a very good step and this has been a very good step for mitigation.

BSB

To protection of livelihood for those people who are living in the elephant prone areas that will be very beneficial of course. How has been the community's response towards your short-term efforts like solar powered fencing that you are the forest department is implementing here in collaboration with Aaranyak. How has been the people's cooperation like.

TM

Generally, people of northeast and Assam are very tolerant. They are like traditionally they consider wildlife as part of their culture. So, it's like you know even without fencing I used to see that there was not much agitation, there were people very tolerant, but once of course they were getting affected, they used to come to us like how and what can be the solution. The earlier only thing we were able to do was we give compensation.



Community members working together to install a solar-powered fence

Now with fencing, when this solution has come, a lot of people are effectively taking up, so now see initially there was a question mark on whether bamboo fencing will survive because bamboo post it's not a concrete post, so it can be damaged instantly. So, there is a lot of question mark. So, our entire strategy was a tripartite arrangement which we had made department we had the NGO Aaranyak and we had the community, so, we all 3 used to sit together, so, if we want to scale this fencing so there has to be a regular source of funding. so, government has funded us for the fencing. Now this has to be not just about implementing the fencing. It has to be people, has to be part of that maintenance. They were made part of even implementation, they were being trained and regularly team is going and training them, monitoring it also. So now this normally in where even concrete posts have failed in one year our bamboo fencing has been very much successful till today even after 2 years of construction.

That is purely because community is participating and community participation in turn has increased better bonding with forest department and the community. So, this has been a good effort in the sense like when our team goes for interpretation duties community is there with us. It's not like they are in a two different team, opposite team. They're the same team who are like part of the same team. So, it is helping us a lot.

BSB

There is a volunteer group that Aaranyak has formed that ECN (Elephant Conservation Network) those volunteers have been helpful I think in the effort.

TM

Elephant movement of course like it is always important early information dissemination is very important. So, it's like the WhatsApp group ECN group is helping a lot. In fact, we get to know where exactly elephants are, we get the videos, we get the photographs. If there is anything even if there is any elephant is injured, get to know the details a lot. And also, I must also say that in the last year government of Assam has a scheme Gajah Mitra scheme. So, we have actually formally organized volunteers into Gajah Mitra units. Currently we have around 15 Gajah Mitra units in Assam and they have been given logistics in fact very recently they were given the logistics and so that they can actually be effectively be our extension of the forest army, in the field areas.



ECN members during a training programme

BSB

How many of those are allotted in Goalpara?

TM

Currently there are 8 volunteers in each Gajah Mitra team and there are 15 Gajah Mitras.

BSB

In Goalpara do you have some of them ?

TM

In Goalpara like you know we have 5 Gajah Mitra in Lakhipur range, 5 in Goalpara, 3 in Rang Juli and 3 in Krishnai. And there is scope for expansion also.

BSB

Okay. So, this solar power fencing, you have already told is a short-term solution. The main thing lies in the habitat restoration and beyond those things that the problem of wildlife and expanding human population is has been such that people have to now learn to coexist with the wildlife not only elephant but lots of animal. So how do you think that how should we educate our children from the school level that it has become part of our life to remain to coexist with the wildlife in certain parts of the world. What do you say about that?



A home scarred by human-elephant conflict

TM

As I said the entire Assam northeast population generally it's a part of their culture. It was already, but then of late of course with development the culture which might be getting eroded, already there is some anxiety among the people regarding human elephant conflict. When anxiety builds up it becomes it might turn into hostility so at that point of time if we just say like it has, we have to coexist that time it might not make sense so we are also promoting I think we are taking up at higher level if this coexistence can be a part of school curriculum instead of just a random one of awareness activity. So, we are trying to take up. This is now recently after recent formation of the new govt is a part of our forest policy Education like involving education department. So, we are trying to develop into a part of school curriculum where from the kid itself from the child itself you know a kid is being told about stories and then so that you know he is gradually that culture which was actually very prominent Assam is retained in the coming days.

BSB

It becomes formalized short of thing formalizes part of the education system.

TM

Exactly that's where I think the ultimate solution will lie of course, we have to continue to do with now village exposures and then habitat restoration along with that this soft component is going to be very helpful.

BSB

You already mentioned that Goalpara's Forest spread of the forest portion are such that it intersperses the human settlement. So, interface with elephant is imminent, it will happen. So, if people learn to coexist then it will definitely help.

TM

There are two different challenges which we face in Goalpara. One is like there is a state boundary and other is like our forest within Goalpara and our forest itself like spread mosaic spread across human settlements. So, what happens one is that for elephants it's a guard when it comes to state boundary for wild elephants it's a Goalpara Garo landscape we don't know whether its Meghalaya or Assam. So that's why we are in recently we had this landscape management plan which was being prepared under APFBC Government of Assam, so there it has been taken up how like both the states both the administrative units like both the departments forest department on both sides, religious on both sides can be brought in same platform. Sometimes we have seen that people from Meghalaya try to say that it is coming from Assam, we say that it is coming from Meghalaya, so the fight ultimately will lead to conflict more and then it will not give good result. So we are now trying to bring them on the same platform. We have already last couple of years conducted world elephant day together, regular meetings are being held at border villages.

BSB

You mean Assam Forest Department and Meghalaya Forest Department.

TM

Yes Assam Forest Department and Meghalaya Forest Department and regular meeting are at the border villages. So even staff, you know we are trying to have common meeting so that we can discuss how best together we can solve it because we should not act as two independent opposites team but just can be taken as collective action. So now it is also going to be formal and soundly about the interspersed like human habitation, small for forest patches that again of course school curriculum, we are trying to do and then the mitigation efforts and Gajah Mitra is all these things all going to help in the long term.

BSB

In the interstate border, how is the coordination between people to people coordination, the forest departments are trying to coordinate that's fine. How has been a traditional coordination between the people of both the states regarding this problem?

TM

Generally, its good but when it comes to economic loss, sometimes we see that at a loss as more than these things obviously there is with result in some conflict at the border areas, so, where we are now trying to create one additional solution. Lot of our landscape are under commercial plantations, so, which are not suitable for elephant habitats. So, suppose if you want to make it into a suitable elephant habitat, we also have to look into the fact that if there are some tribal populations their livelihood is not affected. So there has to be one solution where they are livelihood is also secured and habitat also restored and that's how the conflict will also reduce and people, we want to trying to create a win-win situation. So, one such scheme which has been approved by govt of assam is the Bamboo Plantation Scheme. Where initially we one experimental plot has already been done and it's it has given excellent results in Goalpara. So, we have taken up around 230 hectares.

BSB

Where is it? Under which range?

TM

In Rangjuli range near Dhupdhora. We have two reserve forest, Hatibari and Dihira reserve forest, so the reserve forests were under actually encroachment.

There were a lot of actually tea gardens and betelnut garden and everything. So, then we had to talk to the people. If you directly go and say we are challenging the livelihood, so livelihood again becomes a conflict. We sit with the people we found the solution, how best we can ensure their livelihood also by securing the forest because anyway is a non-forest activity and not allowed as per law. So, then we came out with his solution of Bamboo Plantation where the department will fund the bamboo plantation. We will execute the bamboo plantation through the JFMC organised by the villages. In the current case we have formed 3 villages into single JFMC. So, that JFMC is implementing the bamboo plantation and funding everything is done by the department. Now land will still be forest but then the community the JFMC will be given the harvesting rights. And we have an estimate where in 100 hectares. So JFMC can generate once the bamboo plantation is successful say on from the fifth year onwards and from 100 hectare a JFMC can generate a minimum at a very conservation estimate assuming that the production is not very efficient. So, it's a very assuming just lower than 50% efficiency they can generate up to 60 lakhs in a year and it's a recurring income every year and 100% revenue goes to the village, so this model I mean already which we have planted 2 years back. Success in the sense the plantation has come excellent, it's in a position by 2029 they will be able to harvest and earlier the elephants which used go to the village now they are in the bamboo plantation. So, the conflict in those 3 villages absolutely become zero and people are also very happy and livelihood is secured and forest land is also secured because it is directly under protections of the local people, if any other external person settle down, illegal settlement is there they won't allow it. So that's like now that 3 villages are now part of our forest department. So that's model we want to scale it.

BSB

Part of the forest return in protecting the forest land, protecting the elephants and mitigating.

TM

All the 3 objectives are achieved. One livelihood is secured, forest land is restored and human for elephant there is a very good habited, so the three objectives which we wanted to have it is achieved. So, it's like this being a successful model now we are trying to scale it in different levels. So, after 230 hectare this year we have taken additional 150 hectare in Goalpara itself. So, there's a lot of scope and this can be scaled even to know Meghalaya. So, there can be additional this thing.

BSB

So, it is being experimental only in Goalpara Division or any other parts of the Assam also?

TM

Initially it was experimented in Goalpara. Now because of become successful like Bamboo Plantation Scheme as such has been approved under state CAMPA, so now it can be taken up in any part of the state.

BSB

Thank you very much. I have one question beyond ACC. It is for the young people, young students who are aspiring to join this noble service, because forest service officer are doing noble job in given the critical situation our planet is in the protection of forest and biodiversity is a great responsibility nowadays. Any aspiring young people want to join this service, what they have to do, just give a tip to them. That is for the greater interest.

TM

One thing I must say that I have a service as such is very fulfilling if you really loud nature if you want to experience something real nature then this is a very fulfilling service you will be very satisfied you will have a very good experience in your life. So, if we want actually people who are actually interested to come into forest service and those who want to, those who really aspiring, this exam needs only consistency. It doesn't need you to be extraordinary talented. It just needs you to be consistent like if you're preparing something it should be very consistent very discipline. Apart from knowledge also improve your knowledge and how to put your thoughts into words because in the exam that is where it all translates you. So, if you do something if you're not able to put it across that also you need to read extensively, write extensively and then have confidence. You can obviously clear it. Of course, one thing I must say, if you love nature this is a extremely fulfilling profession.



DFO Tejas Mariswamy with his team during fieldwork

BSB

How you personally got interested in Indian forest service? Did you plan it in from initial stage of your student life or it came sometime later. How you got interested?

TM

To be frank we had not much idea about civil service. So, I happened to be in NIT Surathkal, then during the final year it used to be, see I always, of course love traveling but we had not much idea what about civil service as such. So, we were like into during final year we got. I had a selection in Satyam and it was 2009. You might know there is an incident where Satyam itself there was some issue it went down so then there was a recession then a thought came what to do, then my friend was preparing for civil service, but civil service like as such during my preparation time itself. Even my preference was not on administrative and police service. It was my last preference. In fact, my first preference was initially Foreign Service, then forest service. So, it was either foreign or forest. But when I joined forest service, I had not much idea that time. So, I was too keen to travel so then when we joined the academy, went into in the academy, we have this introductory tour and so where we sent to run someone national park we went to run more and 3-4 professionals are kept in the camp for a week, so we stayed in the camp for one week, that really changed. It's then I thought like there is no better service than forest service. This is something which otherwise we would have not experienced in life. It's like if we are in any other job or service, this side of life, this side of nature or like normally, we stay in cities otherwise this part you would have missed it. So, then I thought like this is where I need to be. So, then I did not look at any other exam.

BSB

So, you sound very happy in this process.

TM

Yes, the one-week experience over there. So that was first time staying in the national park. I mean if I talk about the entire experience at the different podcast, it is a very big experience. It was lovely that really changed then this is where we want to be, I am actually be lucky to be in this service.

BSB

Thank you. Thank you, Assam Forest Department is also lucky to have a dedicated officer like you.

TM

Thank you so much.



(The interview was transcribed by Gargi Das, an intern at Aaranyak under the guidance of Ms. Bobby Nath, Assistant Director (Administration), from the Eco Heroes Podcast. Watch the Podcast - <https://bit.ly/EcoHeroesPodcast8>)



SUSTAINABLE UTILISATION OF INVASIVE AND WEEDY PLANTS IN ASSAM: A CONSERVATION APPROACH

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1. Introduction:

Assam lies within the Eastern Himalayan biodiversity region and falls under the Indo-Burma biogeographic realm, making it one of India's most ecologically sensitive landscapes. Its forests, wetlands, riverbanks, agricultural fields, tea gardens, and village commons harbour diverse plant species, medicinal resources, crucial wildlife habitats, and sustain local livelihoods. The Environment, Forest and Climate Change Department, Government of Assam, states that the region has exceptional plant diversity, a humid climate, varied physiography, and many endemic plant species, features that make Assam's ecosystems significant yet prone to disruption [1].

Within these landscapes, several fast-growing herbs and shrubs function as invasive, naturalised, or aggressive weedy species. These plants establish in disturbed soils, roadsides, fallow areas, crop borders, forest edges, and wetland fringes. Biological invasions are widely recognised as significant drivers of ecological change, impacting biodiversity, ecosystem services, human health, and livelihoods [2]. The species examined in this review—*Mimosa pudica* L., *Euphorbia hirta* L., *Parthenium hysterophorus* L., *Senna alata* (L.) Roxb., and *Senna occidentalis* (L.) Link—should not be regarded solely as weeds. When managed scientifically, these species can serve as valuable bioresources for public awareness, biomass management, medicinal research, composting, phytochemical studies, and conservation initiatives focused on restoration [2–9].

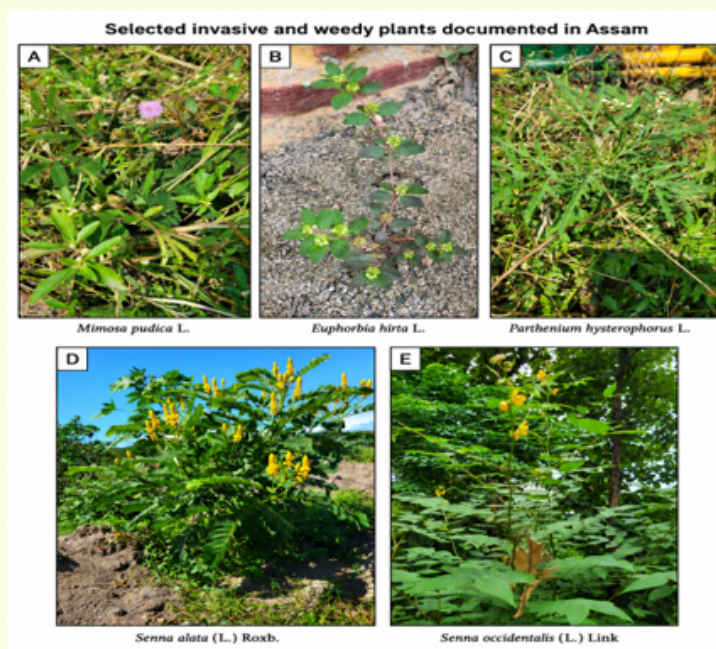


Image1: Selected invasive and weedy bioresources of Assam: *Mimosa pudica* L., *Euphorbia hirta* L., *Parthenium hysterophorus* L., *Senna alata* (L.) Roxb., and *Senna occidentalis* (L.) Link Image Credit: Mitali Baruah

2. Selected Species

2.1 *Mimosa pudica* L.

M. pudica is widely known as a plant because its leaflets fold when touched. It is a creeping, low-growing, prickly herb that can occur in disturbed sites, open grasslands, village paths, gardens, and field margins. Its ecological role includes rapid colonisation of open soil. At the same time, it has been studied for ethnomedicinal and pharmacological properties, including antimicrobial, anti-inflammatory, wound-healing, antioxidant, analgesic, and hepatoprotective potential [3].

2.2 *Euphorbia hirta* L.

E. hirta is commonly found along roadsides, open fields, garden borders, and disturbed soils. Although small in stature, it contains a diverse array of phytochemicals, including flavonoids, tannins, polyphenols, triterpenes, and sterols. Reviews have documented its traditional medicinal uses and pharmacological activities, particularly in relation to respiratory, gastrointestinal, antimicrobial, anti-inflammatory, and antioxidant effects [4]. In Assam, this species is noteworthy because many herbaceous weeds near settlements may have ethnobotanical significance; however, scientific validation is required before any medicinal use [4].

2.3 *Parthenium hysterophorus* L.

P. hysterophorus. It is recognised as one of the most problematic invasive weeds in India. It invades roadsides, wastelands, agricultural margins, urban open spaces, and grazing lands, where it can reduce native plant growth, diminish crop productivity, and cause allergic reactions in humans and livestock [5,6]. Therefore, sustainable utilisation of *P. hysterophorus* must be undertaken with caution. Its biomass may be used for composting, biochar production, biopesticide research, and phytochemical investigations, but direct handling requires gloves, masks, and proper disposal due to its health-related risks [5,6].

2.4 *Senna alata* (L.) Roxb.

S. alata, commonly called candle bush or ringworm shrub, is often found in moist, disturbed places, roadsides, and open lands. It can behave as a weedy shrub in tropical areas. However, it is also widely studied for its ethnobotanical and pharmacological properties. Reviews report its traditional use in skin-related conditions and its phytochemical richness, including anthraquinones, flavonoids, tannins, alkaloids, phenolics, and other secondary metabolites [7]. Its antifungal activity has also been investigated experimentally, supporting its relevance in medicinal plant research [8]. In a resource-based conservation approach, *S. alata* can be considered a plant that requires ecological monitoring and utilisation [7,8].

2.5 *Senna occidentalis* (L.) Link

S. occidentalis Link inhabits disturbed sites, crop edges, roadsides, and open ground, and is classified as a pantropical weed in many areas. Its leaves, seeds, and roots have undergone study for ethnobotanical uses, phytochemical content, antidiabetic potential, and pharmacological activities [9]. Nonetheless, toxicological issues have been reported, especially concerning the seeds and unregulated use. Therefore, sustainable exploitation should rest on rigorous scientific evidence, not informal or indiscriminated practices [9].

3. In Assam, invasive and weedy plants proliferate rapidly due to high rainfall, warm and humid conditions, disturbed habitat edges, floodplain shifts, roads, settlements, and agricultural expansion [1,2]. Many of these species initially emerge near human-dominated habitats, then spread into semi-natural ecosystems.

These plants are significant for four primary reasons: they indicate ecological disturbance, compete with native herbs and seedlings, affect agriculture, grazing, and land management, and contain valuable phytochemicals that support research, education, and biomass utilisation [2–9]. The objective should not be indiscriminate eradication or unregulated exploitation, but rather scientific identification, safe removal, regulated utilisation, and restoration of native vegetation [2,10].

4. A Systematic Conservation Approach

4.1 Field Identification and Mapping

The first step is accurate botanical identification. Each species should be photographed, mapped, and recorded with habitat details such as roadside, wetland edge, fallow land, forest margin, crop field, or settlement area. This documentation pinpoints invasion hotspots and management-priority zones. In Assam, this is vital because disturbed habitats, wetlands, tea-garden edges, and roadsides frequently act as corridors for the spread of weedy and invasive plants [1,2].

4.2 Risk Assessment

Not all weedy plants create the same level of ecological damage. *Parthenium hysterophorus* should be considered a high-risk species because it is associated with biodiversity loss, crop losses, pasture degradation, and health problems in humans and livestock [5,6]. The status of *M. pudica*, *E. hirta*, *S. alata*, and *S. occidentalis* should be reviewed according to their abundance, habitat preference, spread pattern, and effects on native plant regeneration [3,4,7–9].

4.3 Mechanical Removal

Mechanical removal consists of hand pulling, uprooting, cutting, and controlled biomass collection. Extraction should optimally occur before flowering and seed set to reduce spread. For *P. hysterophorus*, protective gloves and masks are essential because of its allergenic and toxic properties [5,6].

Removed biomass must not be discarded near water, crops, forest borders, or exposed soil patches, since seeds and viable plant parts could propagate further. Invasive plant control is crucial but often costly in ecological restoration, and non-chemical techniques, such as mechanical removal, remain essential in many biodiversity-rich, developing regions [10].

4.4 Sustainable Biomass Utilisation

Invasive and weedy biomass can be repurposed for composting, vermicomposting, biochar production, post-treatment mulching, phytochemical screening, educational resources, and herbarium training. Medicinal applications should never be encouraged without scientific assessment, dosage regulation, and toxicological review. This precaution is critical for *P. hysterophorus* and *S. occidentalis*, for which toxicity and health hazards have been established [5,6,9].

4.5 Restoration with Native Species

After removal, exposed soil should be quickly revegetated. Plant native grasses, herbs, shrubs, and trees according to habitat. In Assam, adapt restoration locally: use wetland plants along wetland edges, native shrubs and trees at forest margins, and hardy native ground covers along roadsides. Restoration deters reinvasion and sustains pollinators, soil stability, native seedlings, and biodiversity. Restoration literature emphasises that invasive plant management should always be paired with ecological restoration rather than treated as a one-off removal [10].

5. Scientific and Social Value

This topic is significant to the scientific community as it integrates taxonomy, ecology, ethnobotany, pharmacology, conservation biology, and ecosystem management. For students and researchers, these species illustrate how common plants can possess complex ecological, biochemical, and cultural value. For local communities, increased awareness can transform weed extraction into a safe biomass utilisation practice and a means of conservation education.

In Assam, this approach promotes biodiversity conservation, acknowledges traditional plant knowledge, and encourages resource-oriented environmental stewardship [1,2,10].

6. Conclusion

Sustainable utilisation of invasive and weedy plants does not entail encouraging their proliferation. Instead, it involves converting ecological challenges into scientific opportunities. In Assam's biodiversity-rich landscape, species such as *M. pudica*, *E. hirta*, *P. hystrophorus*, *S. alata*, and *S. occidentalis* require comprehensive study, controlled management, and responsible utilisation. A systematic approach encompassing identification, mapping, risk assessment, removal, biomass utilisation, and restoration with native species can safeguard biodiversity while generating educational, scientific, and resource-based benefits [1,2,10].

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কাকো খাতিৰ নকৰা মানুহজনেও প্ৰকৃতিৰ ওচৰত মূৰ দোঁৱাইছিল

জয়ন্ত কুমাৰ পাঠক
(লেখক আৰণ্যকৰ পৰিৱেশ শিক্ষা আৰু কাৰ্যক্ষমতা বৃদ্ধি বিভাগ (EECBD) ৰ সহকাৰী
সঞ্চালক তথা ভাৰপ্ৰাপ্ত প্ৰধান।

তেজৰে কমলাপতি ...

কাকো খাতিৰ নকৰা মানুহজনেও কিন্তু প্ৰকৃতিৰ ওচৰত মূৰ দোঁৱাইছিল। পৰম আকুলতাৰে তেওঁ প্ৰকৃতিৰ প্ৰতিপালন কৰিছিল। তেওঁৰ এই শ্ৰদ্ধা আৰু সমৰ্পন আছিল অকৃত্ৰিম। জীৱনৰ শেষ মুহূৰ্তলৈ তেওঁ কেৱল প্ৰকৃতি আৰু সময়ৰ ওচৰত শিৰ নত কৰিছিল। বৌদ্ধৰ আদৰ্শৰে অনুপ্ৰাণিত সেই ব্যক্তিত্বৰ বাবে প্ৰকৃতিয়েই আছিল ভগৱান।

বন-বন্যপ্ৰাণী, হাবি-জংগল, নৈ-সাগৰ ভালপোৱা মানুহজন মানুহ আছিল। হয়, সন্দেহাতীতভাৱে মানুহেই আছিল। ভগৱান নাছিল। আমি অভাজনে নভবা, ভাবিব নোৱৰা, নকৰা, কৰিব নোৱৰা কামবোৰো তেওঁ কৰিছিল। আমাৰ বৌদ্ধিক মনস্তাত্ত্বিক শাৰীৰিক মনুষ্যতা, স্থিৰতাৰ বিপৰীতে তেওঁ আছিল দূৰন্ত গতিশীল- সকলোতে। আমাৰ সাহস, সততা, পংকিলতা, জটিলতাৰ পৰা আমি ঢুকি নোপোৱা দূৰত্বত আছিল সেই আচল মানুহজন। আমি নিজৰ মাজত আৱদ্ধ হৈ একাধৰ পৰা কাল অমানিশাৰ ফালে ধাৰমান হ'বলৈ লোৱাৰ বিপৰীতে তেওঁ লৈ ফুৰিছিল এচৰেঙা আশাৰ পোহৰ- সকলোৰে বাবে সকলোৰে কাষত থাকি। আমি পৰস্পৰৰ কাষত থাকিও ক্ৰমশঃ ঢুকি নোপোৱা দূৰত্বত অৱস্থান কৰিবলৈ লোৱা জটিলতাৰ সময়ত তেওঁ হৈ পৰিছিল সকলোৰে স্পন্দন।

অচিনাকি হৈও তেওঁ আছিল সকলোৰে অভিন্ন। সহস্ৰজনৰ মাজত থাকিও একক, অনন্য আছিল সেই কিংবদন্তি পুৰুষ। অসাধ্য সাধনৰ কৃতসংকল্পক খনিকৰগৰাকী আকাশৰ তৰা নহয়, জোন আছিল- অসীমৰ মাজতো একক, অনন্য। সেই সত্য তেওঁ ভালদৰেই বুজিছিল। তেওঁৰ ব্যক্তিত্ব, প্ৰজ্ঞা, প্ৰতিভা, দক্ষতা, মানৱতা, সামাজিক দায়ৱদ্ধতাৰ বিশ্লেষণ কৰিব পৰাকৈ আমাৰ জ্ঞানৰ সীমাবদ্ধতা আছে। সেই স্পৰ্ধা নকৰোঁ। সেয়া বিজ্ঞজনলৈ এৰিছোঁ। অনেকে এই বিষয়ে ইতিমধ্যে বহু লিখিছে, কৈছে। সংগীতৰ পূজাৰী, মানৱহিতৈষী শিল্পীগৰাকী প্ৰকৃতিৰো আজন্ম প্ৰেমিক আছিল- স্মৃতিৰ এই থিৰিকিখন খুলি চোৱাৰ এয়া আমাৰ এক বিনম্ৰ প্ৰয়াসহে। বিশৃংখল বুলি স'ততে বদনাম পোৱা প্ৰাণৰ শিল্পীগৰাকীয়ে সেউজ মন এটা সদায় অত্যন্ত আকুলতাৰে সযতনে লৈ ফুৰিছিল। তাৰ সুবাস তেওঁৰ অমিয়া কণ্ঠৰ সমানেই সুখদায়ক। সেয়ে হয়তো অমৃত কণ্ঠৰে নিগৰিছিল-

সেউজীয়া মন সেউজীয়া প্ৰাণ
সেউজীয়া যৌৱন সেউজীয়া গান
সেউজীয়া দিন মোৰ সেউজীয়া নিশা...

আশা মোৰ আশা এখনি সৰহ নৈ...

অসমৰ ক্ৰমবৰ্ধমান পাৰিবেশিক সমস্যাৰ সমাধানত জনসাধাৰণ, চৰকাৰ তথা চৰকাৰী বিভাগ, বেচৰকাৰী অনুষ্ঠান-প্ৰতিষ্ঠানৰ উমৈহতীয়া পদক্ষেপ অনস্বীকাৰ্য। কিন্তু এই ক্ষেত্ৰত আন্তৰিকতা, আগ্ৰহ, অংশগ্ৰহণ সন্তোষজনক নহয়।

সেয়েহে কোনে, কাৰ জৰিয়তে এইবোৰ বিষয় আলোচনা কৰিলে সুফল আশা কৰিব পাৰি সুযোগ পালেই দুই-একৰ লগত মত-বিনিময় কৰোঁ। এয়া পেশাতকৈ মনৰ তাগিদাতহে কৰি আহিছোঁ। তেনে ভিন্ন কথা-বাতাত বেছিকৈ পোৱা দুটা পৰামৰ্শ আছিল- জুবিন গাৰ্গ আৰু ধৰ্মগুৰুসকল। জুবিন গাৰ্গ নামটো প্ৰায় সকলোৰে লৈছিল। অসমৰ প্ৰকৃতি-পৰিবেশৰ সুৰক্ষাত তেওঁলোকৰ সক্ৰিয় অংশগ্ৰহণ সহায়ক হ'ব পাৰে। জুবিন গাৰ্গ আৰু ধৰ্মগুৰুসকলৰ জৰিয়তে এই বিষয়ে আলোচনা কৰিলে হেনো এই জটিলতাৰ সমস্যাত কিছু সফলতা আশা কৰিব পাৰি।

জুবিন গাৰ্গে আহ্বান জনালে লাখ লাখ অনুৰাগীয়ে শুনিব, মানিবও। তদুপৰি জুবিনে নিজেই তেনে কাম কৰি এক আদৰ্শ ইতিমধ্যেই দাঙি ধৰিছিল। বন-বন্যপ্ৰাণী সংৰক্ষণৰ অন্তৰ্নিহিত গুৰুত্বও জুবিনে বুজে। আনহাতে প্ৰায় সকলো ধৰ্ম, ধৰ্মীয় শাস্ত্ৰই প্ৰকৃতি, জীৱ-জন্তুৰ ৰক্ষণাবেক্ষণত গুৰুত্ব প্ৰদান কৰিছে। আমাৰ তেনে অনানুষ্ঠানিক কথোপকথনত আৰু এটা কথা ওলাইছিল- এই দুই পক্ষৰ লগত লাখ লাখ ভোটৰ জড়িত আছে, গতিকে চৰকাৰে ইচ্ছা নাথাকিলেও তেওঁলোকৰ আহ্বান মানিব। কথাটো সঁচাকৈ মনকৰিবলগীয়া। ৰাইজৰ জুবিনৰ প্ৰতি থকা আস্থা ই আমাক চুই গৈছিল। আমি অমানিশাৰ আন্ধাৰত আশাৰ এগছি বন্তি দেখিছিলো।

ঐ নাহৰ ঐ নাহৰ...

ইউকেলিপ্টাছৰ দৰে ওখ হ'ব খোজা জুবিন গাৰ্গৰ প্ৰকৃতিৰ প্ৰতি থকা নিভাঁজ ভালপোৱাৰ চানেকি অনেক। তেওঁ প্ৰকৃতিৰ ক্ষতি হ'ব পৰা কোনো কামকে মানি ল'ব পৰা নাছিল। তেনে যিবোৰ সমস্যা কিম্বা কাম নিজৰ পৰ্যায়ত সমাধান সম্ভৱ সেয়া তেওঁ নিজেই লাগি-ভাগি সমাধান কৰিছিল। য'ত মাত মতাৰ প্ৰয়োজন আছিল আপোচবিহীনভাৱে নিজৰ মত ব্যক্ত কৰিছিল।

স্বভাৱত বৰ উৎপতীয়া শিল্পীজনে বন-বন্যপ্ৰাণীৰ সংৰক্ষণৰ কথা-বতৰাত পৰম একাগ্ৰতাৰে ভাগ লৈছিল। একান্তমনে দুহাতৰ আঙুলি ফুটাই ফুটাই সেই কাহিনী শুনিছিল- ঠিক আইতাৰ মুখত সাধু শূনাৰ দৰে। তেনে আলোচনাৰ মাজত তেওঁ আন কোনো প্ৰসংগ উপস্থাপন হোৱাটো একেবাৰে বিচৰা নাছিল। আনকি দুই-একে তেনে আলোচনাৰ মাজত আন প্ৰসংগ আনিবলৈ বিচাৰোতে জুবিনৰ পৰা ধমকি খাব লগাও হৈছিল- দেখা নাই কনজাৰভেশ্যনৰ (বন-বন্যপ্ৰাণীৰ সংৰক্ষণৰ) কথা হৈ আছে...

আমাৰ বহুতৰে মনত সদায়েই ৰৈ যোৱা জুবিনৰ এখন ছবি- সেই যে পাইনজোপাক সাবটি আছিল পৰম আকুলতাৰে ...। আহ, কি যে গা শাঁত পেলোৱা অনুভৱ! কেতিয়াবা সংগীতৰ অনুষ্ঠান সামৰি পুৱতি নিশাও আহি গছজোপাক সাবটি ধৰিছিল। আপুনি বাৰু কেতিয়াবা জুবিনৰ দৰে আন্তৰিকতাৰে চকু মুদি গছ এজোপা সাবটি পাইছেনে? এবাৰলৈ হ'লেও। যদি পোৱা নাই মাথোঁ এবাৰ দুই-তিনি মিনিট একান্ত মনে ডাঙৰ গছ এজোপা সাবটি চাবচোন। আপোনাৰ জীৱনৰ মাত্ৰ তিনিটা মিনিট দিব নোৱাৰিবনে? আপুনি লাগিলে জুবিন অনুৰাগী হওকেই বা নহওকেই, এই সামান্য কামটো কৰি অসামান্য অনুভূতি লোৱাত আপুনি নিশ্চয় নাথাকিব। তেতিয়া অন্ততঃ আপুনি অলপ হ'লেও অনুভৱ কৰিব পাৰিব জুবিনে কিয় গছ-বন চৰাই-চিৰিকটি ভাল পাইছিল। আমাৰ বিশ্বাস গছক সাবটি ধৰাৰ আঁৰৰ বিজ্ঞানো জুবিনে ভালদৰে উপলব্ধি কৰিছিল। আজিকালি 'ফ'ৰেষ্ট থেৰাপি' বুলি যে কয় জুবিনৰ কাৰ্য তাৰেই অংশবিশেষ। প্ৰকৃতিৰ প্ৰতি থকা আকুলতাৰ উপৰি হয়তো অত্যন্ত ব্যস্ততাময় জীৱনৰ মাজত দেহ-মনৰ অৱসাদ আঁতৰাবলৈ জুবিনে সুবিধা পালেই সেই সুখানুভূতি ল'বলৈ বিচাৰিছিল। সাগৰ, নদী, অৰণ্য, চৰাই-চিৰিকটি, জীৱ-জন্তুৱে যেন জুবিনক অনবৰত হাতবাউলি মাতি থাকে।

কিয়ো নকৰিছিল মানুহজনে। সঁচাকৈয়ে তেওঁ কৈ যোৱাৰ দৰে আজি সকলোৱে আশ্বৰ্যচকিত হৈ সুধিছে- 'অ' তেওঁ এইটোও কৰিছিল, সেইটোও কৰিছিল...! বুকুত হেঁচা মাৰি থকা দুখ আৰু মনৰ ক্ষোভৰ মাজতো আজিও সকলোৱে অনাবিষ্কৃত জুবিনক আবিষ্কাৰ কৰি গৈ আছে। অসমৰ প্ৰাকৃতিক সম্পদৰ প্ৰাচুৰ্য আৰু সম্ভাৱনাক লৈ তেওঁ প্ৰায়েই চিন্তা ব্যক্ত কৰিছিল। পৰ্যটনক শক্তিশালী ৰূপত প্ৰতিষ্ঠা কৰাটো তেওঁৰ এক দায়িত্ব হিচাপে গণ্য কৰিছিল। অসমৰ পৰ্যটনৰ প্ৰচাৰ-প্ৰসাৰৰ বাবে তেওঁ অহোপুৰুষাৰ্থ কৰিছিল। তেওঁ গভীৰ প্ৰত্যয়েৰে কৈছিল- আমাৰ স্বাভিমান গাঁড়, চাহ, ধনেশক বাদ দি অৰ্থাৎ আমাৰ চহকী জীৱ-বৈচিত্ৰ্যক আওকাণ কৰিপৰ্যটনৰ বাবে কিদৰে আগবাঢ়িম। বিভিন্ন সময়ত প্ৰকৃতি, বন্যপ্ৰাণী পৰ্যটনৰ লগত জড়িত ব্যক্তিসকলক তেওঁ নানান পৰামৰ্শ প্ৰদান কৰাৰ বিষয়ে জনা যায়। তেওঁ আলচ কৰিছিল কিদৰে এই উদ্যোগক আৰু সবল ৰূপত প্ৰতিষ্ঠা কৰিব পৰা যায়।



প্ৰকৃতিৰ অৱদানৰ প্ৰতি তেওঁ ইমানেই মোহাচ্ছন্ন আছিল যে জীৱনৰ এটা সময় কেৱল হাবিতেই অতিবাহিত কৰিবলৈ হেঁপাহ পুহি ৰাখিছিল। এক সাক্ষাৎকাৰত জুবিন গাৰ্গে এই কথা ব্যক্ত কৰিছিল। ব্যস্ততাৰ মাজত সুবিধা পালেই জুবিনে হাবি-জংগল, পাহাৰ-নদীৰ ওচৰ পাইছিল। ল'ৰালিতো হঠাৎ ৰাস্তাৰ পৰা অন্তৰ্ধান হৈ গছ-লতিকা এবোজা বুকুত সাবটি হাবিৰ মাজৰ পৰা ওলাইছিল।

ডিব্ৰু-চৈখোৱা ৰাষ্ট্ৰীয় উদ্যানৰ দাঁতিৰ বনশ্ৰী ইকো-কেম্পলৈ সুযোগ পালেই গৈছিল। তাৰ কাষৰীয়া ল'ৰা-ছোৱালীক বন্যপ্ৰাণীৰ সংৰক্ষণৰ বাবে উদ্বুদ্ধ কৰিবলৈ প্ৰয়াস কৰিছিল। কেটেপাৰে চৰাই-চিৰিকটি মৰাৰ সলনি চৰাই নিৰীক্ষণৰ পৰামৰ্শ দিছিল। সেয়া ২০০৩-০৪ চন মানৰ কথা। আন ঠাইতো ইয়াৰ ব্যতিক্ৰম নাছিল। অসমৰ থলুৱা গছ-বনক সামৰি নিজাকৈ এখন সৰু বন-বাটিকা বা আৰ্ব'ৰেটাম প্ৰতিষ্ঠা কৰিবলৈ ইচ্ছা প্ৰকাশ কৰিছিল। তেওঁ কাৰ্যিকভাৱে আঁতৰি যোৱাৰ মাত্ৰ চাৰিমাহ আগত, মে' মাহত সেই বনশ্ৰীৰ পৰা মিৰিকা টেঙাৰ পুলি এটা লৈ আনিছিল।

বন্যপ্ৰাণীৰ চোৰাংচিকাৰ প্ৰতিৰোধী অভিযানত জুবিন গাৰ্গৰ অৰিহণা অনস্বীকাৰ্য। ২০০৭ চনৰ আগষ্টত কাজিৰঙাত গঁড়ৰ চোৰাংচিকাৰ প্ৰতিৰোধী এক সজাগতা ৰেলীৰ আয়োজন কৰা হৈছিল। ভূমি নামৰ এক সংস্থাই এই অভিযানৰ গুৰি ধৰিছিল। কাজিৰঙা কতুৰ্পক্ষৰ সহযোগত। তেতিয়া দেশত 'য়া আলি'ৰ জোৱাৰ তুংগত। এই সজাগতা কাৰ্যসূচীৰ বাবে জুবিনক যোগাযোগ কৰাত তেওঁ নিজে সক্ৰিয়ভাৱে ভাগ লোৱাই নহয়, লগত আন ২১ গৰাকী শিল্পীৰো অংশগ্ৰহণ নিশ্চিত কৰিছিল। ট্ৰাকত উঠি সমদল কৰিছিল। গান গাইছিল।

ৰাইজক চোৰাংচিকাৰ প্ৰতিৰোধৰ বাবে আহ্বান জনাইছিল। চোৰাংচিকাৰীৰ পুতলিকাও দাহ কৰিছিল। ক'ব পাৰি যে ছুপাৰষ্টাৰ জুবিন গাৰ্গৰ অংশগ্ৰহণে গঁড়ৰ চোৰাংচিকাৰ প্ৰতিৰোধৰ অভিযানক এক অন্য মাত্ৰা প্ৰদান কৰিছিল। প্ৰসংগতে জনাই থওঁ, জুবিন গাৰ্গ উপস্থিত থকাৰ কথা শুনি তেওঁক ওচৰৰ পৰা লগ পোৱাৰ হেঁপাহেৰে বহু যুৱক-যুৱতীয়ে সেই সজাগতা অভিযানৰ স্বেচ্ছাসেৱক হৈছিল। মনত ৰাখিব, জুবিনৰ সংগীতত এনেই মোহাচ্ছন্ন যুৱপ্ৰজন্ম, তাতে 'য়া আলি'ৰ ডগমগনি।

সেই উত্তাপত ৰাইজৰ অংশগ্ৰহণ সহজে অনুমেয়। সেই অভিযানৰ স্বেচ্ছাসেৱক কোনোবা আজি অসমৰ বন্যপ্ৰাণী বিশেষজ্ঞ। জুবিনবিহীন এক গোমা পৰিবেশত চাহৰ মাজে মাজে সিদিনা তেনে এগৰাকী যুৱকে কৈছিল জুবিনৰ বাবেই স্বেচ্ছাসেৱক হোৱা আৰু পৰবৰ্তী সময়ত পখিলাৰ প্ৰেমত পৰাৰ সৰস কাহিনী। কাৰ জীৱনত আৰুবা এনে কিমানকাহিনী লুকাই আছে...! জুবিন গাৰ্গৰ কাৰ্যিক অনুপস্থিতিৰ এমাহ নৌহওতেই আমি ৰোমন্থন কৰিছিলো সেই সময়- ২০০৪-০৯ অসম।

তেতিয়া বন্যপ্ৰাণীৰ অবৈধ বেহাক লৈ জনসাধাৰণৰ মাজত বৰ বিশেষ সজাগতা নাছিল। তেতিয়াই জুবিনে বজাৰৰ পৰা কাছ, শৰালি, সাপকে আদি কৰি আন বন্যপ্ৰাণী উদ্ধাৰ কৰিছিল। আৰু এইবোৰ উদ্ধাৰ কৰি আনি চিৰিয়াখানাক দিয়াৰ লগতে পুখুৰী-বিল, হাবি-জংগলত এৰি দিছিল। এইবোৰ কথা জুবিনে ৰাইজক জনাইছিল।

অসমৰ ইমূৰ-সিমূৰ ভ্ৰমি পৰিবেশন কৰা সাংস্কৃতিক অনুষ্ঠানৰ জৰিয়তে জুবিনে ৰাইজক ওচৰৰ পৰা পাইছিল। সেই মঞ্চ তেওঁ কেৱল সংগীতৰ বাবেই ব্যৱহাৰ কৰা নাছিল, জনসজাগতাৰ বাবেও ব্যৱহাৰ কৰিছিল। তাত পৰিবেশৰ সুৰক্ষা, বন্যপ্ৰাণী, হাবি-জংগলৰ সুৰক্ষাৰ বিষয়ে প্ৰায়েই নিজ অভিমত আগবঢ়াইছিল। এই প্ৰয়াসৰ প্ৰভাৱ আছিল অত্যন্ত ইতিবাচক। জুবিনৰ সেই প্ৰচেষ্টাৰ ফলত বজাৰত কাছৰ অবৈধ বিক্ৰী বহুখিনি কমিছিল। হাট-বজাৰত মানুহে জুবিনৰ আহ্বানৰ কথা আলচ কৰিছিল। আনকি বনৰ চৰাই-চিৰিকতি, কাছ আদি মৰাৰ সলনি নিজে হাঁহ-কুকুৰা পুহি খাবলৈকো জুবিনে বহুবাৰ আহ্বান জনাইছিল।

কাজিৰঙাৰ বন্যপ্ৰাণী পুনৰ্বাসন আৰু সংৰক্ষণ কেন্দ্ৰৰ লগত জুবিন গাৰ্গৰ নিবিড় সম্পৰ্ক আছিল। কেন্দ্ৰটোৱে বানত উদ্ধাৰ কৰা এটা গঁড়কো জুবিনে এডপ্ট কৰিছিল মানে ভৰণ-পোষণৰ দায়িত্ব লৈছিল।



জুবিন গাৰ্গ আৰণ্যকৰ দলৰ সৈতে বাঘাৰ সুবনখাতাত অনুষ্ঠিত বিশেষ বৃক্ষৰোপণ কাৰ্যসূচীত।



সম্ভৱতঃ ২০০৮ চন। কাজিৰঙা ৰাষ্ট্ৰীয় উদ্যানত তেতিয়া কেমেৰা ট্ৰেপৰ সহায়ত ঢেকীয়াপতীয়া বাঘৰ গণনা চলি আছিল। জুবিনে কেনেকৈ এই বিষয়ে জানিব পাৰিলে। কেমেৰা ট্ৰেপৰ সহায়ত বাঘ-গণনা, কেনেকৈ কৰা হয় নিজে কাজিৰঙাৰ ভিতৰত গৈ চাবলৈ তেওঁ ইচ্ছা প্ৰকাশ কৰিছিল। অৱশ্যে কিবা কাৰণত সেয়া হৈ নুঠিল।

সাধাৰণতে দিনত শুই থকা মানুহজনে দোকমোকালিতে শোৱাপাটী এৰে বুলি ক'লে বহুতে বিশ্বাস নকৰিব। কিন্তু জুবিনে হাবি-জংগলৰ কাষ পালে চৰাই চাবলৈ পুৱাই ওলাই গৈছিল। সেই সুন্দৰ মুহূৰ্তত নিয়ৰৰ টোপাল গচকি তেওঁ হেৰাই গৈছিল জাক জাক চৰাইৰ কলৰৰৰ মাজত। নৌকা বিহাৰ কৰি ভালপোৱা জুবিনে এবাৰ হেনো ৰাতি নাৱৰ পৰা ব্ৰহ্মপুত্ৰৰ বুকুত জাপ মাৰি দিছিল। চাগৈ খেয়ালী মনটোৱে কাণে কাণে কৈছিল ব্ৰহ্মপুত্ৰৰ বিশালতাক সাঁতুৰি জুখি চাবলৈ।

মনলৈ আহিছে আন এটা ঘটনা। স্থান মানাহ ৰাষ্ট্ৰীয় উদ্যানৰ দাঁতিৰ ভূটান চকী। ২০১৪ চনৰ জুন মাহ। এই ঠাইৰ প্ৰাকৃতিক শোভা উপভোগৰ বাবে এতিয়াও বহু লোক যায়। জুবিনেও তেওঁৰ সহযোগী, পত্নী গৰিমা গাৰ্গৰ স'তে মানাহৰ কোলাত এখন্তেক জিৰণি লৈ গা-মন সতেজ কৰিবলৈ বুলি গৈছিল। তাত থকা-মেলাৰ সা-সুবিধা বুলিবলৈ বিশেষ একো নাই। 'আৱণ্যক' নামৰ পৰিবেশ-ধৰ্মী সংগঠন এটাই স্থানীয় সংগঠনৰ সহযোগত তাত বালি-শিলৰ ওপৰতে এখন নাৰ্চাৰী প্ৰতিষ্ঠা কৰিছিল। তেওঁলোকে তাত থকা জলসিঞ্চন বিভাগৰ কোৱাৰ্টাৰ এটাত জুবিনৰ থকাৰ ব্যৱস্থা কৰিলে। কিন্তু জুবিনে নিশা কটালে নাৰ্চাৰীৰ কাষতে থকা এটা অতি সাধাৰণ ঘৰত। সংগীতৰ তালত জুবিনৰ উজাগৰী নিশা শেষ হওঁ হওঁ। তেতিয়া সময় প্ৰায় ৬ বাজিছে। জুনৰ সেই পুৱতি নিশা জুবিনৰ শোৱা কোঠাৰ কাষত ভেকুলীয়ে টোৰটোৰাইছে। এসময়ত জুবিনে স্বভাৱসুলভ আচৰণেৰে সিহঁতক উদ্দেশ্যে ক'লে- ঐ, এইটো মোৰহে স্কেল... মোৰ স্কেলত তহঁতে গাইছ কিয়? মোৰ ওচৰলৈ আহিবি, সা ৰে গা মা শিকাই দিম...। অনুভৱৰ ইমান সৰল প্ৰকাশ এখন সৰল অন্তৰৰ বাবেহে সম্ভৱ। সমগ্ৰ প্ৰকৃতিখনেই আছিল জুবিনৰ বুকুৰ আপোন। ভূটান চকীৰ স্থানীয় সংগঠনৰ পৰিবেশ সংৰক্ষণৰ কামত সহায় কৰিবলৈ তেওঁ ফুটবল প্ৰতিযোগিতা আয়োজন কৰিবলৈ বিচাৰিছিল।

গছ ভালপোৱা জুবিনে তেওঁৰ অনুৰাগীসকললৈ আহতান জনাইছিল নিজৰ চৌহদত এজোপা নাহৰ ৰুবলৈ। তেতিয়া হেনো জুবিনক সেই গছৰ মাজতেই পাব। গছৰ ভিতৰত নাহৰ জুবিনৰ অন্যতম প্ৰিয় আছিল। আমি জুবিনৰ আদৰ্শক বিশ্বাস কৰোৱেই বা নকৰোৱেই, গছে আমাক উপকাৰ দিবই। বৰ্তমানত জীয়াই থকাৰ ওপৰত বিশ্বাস ৰখা জুবিনৰ এই আহ্বান তেনেই স্বাভাৱিক।

জুবিনে নিজেই বিভিন্ন ঠাইত গছ ৰুইছিল। তদুপৰি জুবিনে খুব সঘনে কৈছিল যে তেওঁক গামোছা দিয়াতকৈ গছ আৰু কিতাপ দিবলৈ আজি বহুতে জুবিনৰ স্মৃতিত নাহৰৰ পুলি ৰোপণ কৰিছে। আশা কৰো সেই পুলিবোৰৰ তেওঁলোকে সঠিককৈ প্ৰতিপালনো কৰি আছে। অসম জাতীয় বিদ্যালয়ৰ এচাম শিক্ষাৰ্থীয়ে লোৱা এক সাক্ষাৎকাৰত প্ৰকৃতিৰ লগত জুবিনৰ সম্পৰ্ক বিষয়ত কৈছিল-“আমাৰ কেম্পবোৰ চলি থাকে নহয়.. গোটেই অসমৰ বেলেগ বেলেগ ঠাইত। মোৰ ফেন ক্লাবৰ ল'ৰা-ছোৱালীবোৰে এইবোৰ কামতে ব্যস্ত থাকে। মই কৈ দিওঁ, 'আইডিয়া' দিওঁ মই, সিহঁতে তেনেকৈয়ে কৰে, বিভিন্ন ঠাইত। প্ৰত্যেক বছৰে থাকে আমাৰ এই কেম্প বিলাক, কৰ্মশালা বিলাক। বহুত হাজাৰ হাজাৰ গছ ৰুৱাইছো মই, নিজেও ৰোওঁ” আকাশ, বিশেষকৈ ৰাতিৰ আকাশ, পাৰাপাৰহীন সাগৰ ভালপোৱা জুবিন গাৰ্গে কণমাণিহঁতৰ স'তে বাৰ্তালাপ কৰিছিল এইদৰে, তাকো এখন হাতেলিখা আলোচনীৰ বাবে। পাছত বিদ্যালয়ৰ বছৰেকীয়া প্ৰকাশত এয়া ছপা আকাৰে ওলাইছিল।

কাজল বৰণী হৰিণী...

মানুহৰ জীৱনৰ প্ৰথম তিনিটা বছৰ বৰ গুৰুত্বপূৰ্ণ। অৱশ্যে সেই সময়ৰ প্ৰায়বোৰ ঘটনা-পৰিঘটনাই পৰৱৰ্তী বয়সত আমাৰ স্মৃতিত ধৰা নিদিয়ো। অথচ পাছৰ জীৱনটো এই থোকাথুকি জীৱনৰ অভিজ্ঞতাই একপ্ৰকাৰ গঢ় দিয়ে। অৱচেতন মনত ই স্থায়ী সাঁচ বহুৱায়। জীৱনবোধৰ ভেটিও এই সময়ত আল-জাল ৰূপত নিৰ্মাণ হয়, যি ক্ৰমে সময়ৰ আঁচোৰত পূৰ্ণ হয়। সেয়েহে শৈশৱত পৰিয়াল, পৰিবেশৰ ভূমিকাক বিশেষ গুৰুত্ব দিয়া হয়। প্ৰকৃতিৰ প্ৰতি জুবিনৰ দুৰ্বাৰ ভালপোৱা, প্ৰাকৃতিক দূৰ্যোগৰ প্ৰতি স্বতঃস্ফূৰ্ত সঁহাৰিৰ অন্তৰালত গ'ল্ডিৰ [জুবিনৰ শৈশৱৰ নাম] পৰিয়াল, শৈশৱৰ পাৰিবেশিক বাতাবৰণৰ ভূমিকা অন্যতম বুলি ভাব হয়। তুৰা, বিজনী, তামুলপুৰ, তেজপুৰ, কৰিমগঞ্জ আদিত শিশু গ'ল্ডিয়ে লাভ কৰা অভিজ্ঞতাই প্ৰাপ্তবয়স্ক জুবিনৰ মনত সচেতন ৰূপত নদ-নদী, হাবি-জংগল, জীৱ-জন্তুৰ প্ৰতি দায়িত্ববোধ, অনুকম্পাৰ জন্ম দিছিল বুলি ক'ব পাৰি। সেয়েহে জুবিনে অপ্ৰয়োজনত গছ কাটিবলৈ নিদিয়াৰ পিতৃৰ সিদ্ধান্তৰ প্ৰতি সদায়েই সন্মান প্ৰদৰ্শন কৰা দেখা গৈছিল। নিজেও একেটা পথেৰেই আগবাঢ়িছিল। বান আহিলেই কুশিয়াৰা, লংগাৰ বানৰ অভিজ্ঞতাই স্বয়ংক্ৰিয়ভাৱে হয়তো তেওঁক সচেতন কৰি তুলিছিল। বানাক্ৰান্তক - মানুহেই হওক বা পশু-পক্ষীয়েই হওক- সহায় কৰিবলৈ হাতে-কামে লাগি ধৰিছিল। আনলৈ আশা পালি ৰৈ থকাতো জুবিনৰ আদৰ্শৰ পৰিপন্থী। কাজিৰঙাত বানত পশুপক্ষীৰ কষ্ট দেখি তেওঁ যথেষ্ট মানসিক কষ্ট পাইছিল। পাৰ্যমানে সহায়-সহযোগ কৰিছিল। নিৰন্তৰ খবৰ লৈছিল বান পৰিস্থিতিৰ। বানত ৰাইজক সহায় কৰিবলৈ জুবিনে কৰা প্ৰচেষ্টাৰ বিষয়ে প্ৰায় সকলোৰে জ্ঞাত।

জুবিনৰ আনৰ প্ৰতি থকা সহানুভূতিশীল মনটোৰ কথা এতিয়া সকলোৱে বুজিব পাৰিছে। তেওঁ আনৰ দুখ সহ্য কৰিব পৰা নাছিল। আমি সাধাৰণ মানুহে ‘আন’ৰ বুলিলে মানুহৰ কথাকে বুজোঁ। কিন্তু জুবিনৰ বাবে ‘আন’ৰ পৰিসৰ ব্যাপক, তাত মানুহৰ লগতে নয়নাভিৰাম প্ৰকৃতিখনো এবাব নোৱৰা অংগ। কপিল ঠাকুৰে ‘পিতৃৰ দৃষ্টিত জুবিন’ গ্ৰন্থত লিখিছে— “জুবিনৰ জন্ম-জানোৱাৰ প্ৰতি প্ৰীতি দেখি চৰকাৰী কোৱাৰ্টাৰত এখন মিনি জু খুলিছিলো...।” ময়ূৰ পোৱালী যতন লৈ ডাঙৰ-দীঘল কৰি মন্দিৰত গোটাই দিয়া, আঘাতপ্ৰাপ্ত হৰিণাক শুশ্ৰূষা কৰা, হাইঠা চৰাই পকেটত ভৰাই স্কুললৈ নিয়া আদি অনেক কাম তেওঁ পৰম আগ্ৰহেৰে কৰিছিল। আনকি বাঘ পোহাৰ দৰে অসম্ভৱ যেন লগা কামো তেওঁ কৰা বুলি বহুবাৰ উল্লেখ কৰিছিল। ইয়াৰ উল্লেখ কপিল ঠাকুৰৰ কিতাপতো পোৱা যায়। সাপক সুৰুৰে পৰা ভালপোৱা জুবিনে সাপ উদ্ধাৰকাৰ্যতো সহযোগিতা আগবঢ়াইছিল। এবাৰ ১৩ ফুট দীঘল ফেঁটা সাপ এডাল কাজিৰঙাত এৰি দিয়াৰ কথাও জুবিনে নিজেই কৈ গৈছে। মধুসূদন গাৰ্গ, উদাসিনী গাৰ্গ (বগলী), কাকু গাৰ্গৰ (কাউৰী) দৰে কিমানকবা জুবিনে মৰমেৰে আকোঁৱালি লৈছিল...। বিভিন্ন সময়ত জীৱ-জন্তুবোৰ জুবিনৰ ওচৰলৈ নিজে নিজেই আহে। খাৰঘূলিৰ ষ্টুডিঅ’লৈ ধুমুহাৰ মাজত অহা তেনে এটা বান্দৰ পোৱালীয়েই হ’ল মধুসূদন। বান্দৰ বুলিলে মস্ত উৎপতীয়া জন্তুটোৰ ছবি মনলৈ আহিলেও মধুসূদনে জুবিনৰ লগত একেলগে আছিল। কোনো অশান্ত পৰিস্থিতিৰ সৃষ্টি কৰা নাছিল। এবাৰ বাটৰ পৰা অনা মুৰ্গী পোৱালী এটা জুবিনে লগত লৈ ফুৰিছিল। পোৱালীটোৱে পকেটৰ পৰামাজে মাজে মূৰটো উলিয়াই ভুমুকি মাৰে। তেনেকৈ সি ডাঙৰ হৈছিল। ঘৰত হাঁহ জাকৰ লগত সময় কটোৱা, ক’ৰবাত এজাক বান্দৰক খাদ্য দি থকা, কান্ধত ভাটো চৰাই এটি লৈ কথা পাতি থকা আদি অসংখ্য অভিজ্ঞতাই প্ৰকৃতিপ্ৰেমী জুবিনক অনন্য ৰূপ প্ৰদান কৰি গৈছে।

যুগস্ৰষ্টা জুবিনৰ শেষ বিদায়ত পোহনীয়া কুকুৰ চাৰিটাকো— ৰেশ্ব, টিয়া, মায়া, ইকোক বিদায় জনাবলৈ লৈ অনা কথাটোৱে প্ৰমাণ কৰে ইহঁতৰ প্ৰতি জুবিনৰ কিমান মৰম আছিল।

তুৰাত পিতৃয়ে পুৱাই খুলি দিয়া খিৰিকিখনেৰে সোমাই অহা ৰৌদ্ৰস্নাত শীতল বতাহজাকে জুবিনক যেন গোটেই জীৱন আৱৰি ৰাখিছিল। তেওঁৰ প্ৰকৃতি প্ৰেমৰ বীজ হয়তো তেতিয়াই অংকুৰিত হৈছিল। পিতৃয়ে বিশ্বাস কৰে জুবিনৰ সংগীতৰ সফলতাত পুৱাৰ সেই পৰিষ্কাৰ বতাহৰ অৰিহণা আছে। একেদৰে আমাৰ বিশ্বাস প্ৰকৃতিৰ প্ৰতি জুবিনৰ আনুগত্যতো সেই বতাহজাকৰ অৰিহণা নিশ্চয় আছে।

স্বাভিমানে প্ৰকৃতিপ্ৰেমী জুবিনে বৰ অসমক লৈ অযুত সপোন পুহি ৰাখিছিল। আমাৰ চহকী জীৱবৈচিত্ৰ্যক বিশ্ববাসীৰ আগত দাঙি ধৰাৰ সপোন এটায়ো সংগপোনে জুবিন বুকুত ডাঙৰ হৈ আহিছিল। অসমৰ ৰিজাৰ্ভ ফৰেষ্ট, সুৰক্ষিত বনাঞ্চলৰ আদিৰ বিষয়ে আমি ভালকৈ নাজানো। আমি ৰাষ্ট্ৰীয় উদ্যান আৰু নিৰ্দিষ্ট কেইখনমান অভয়াৰণ্যৰ বাহিৰে বাকীবোৰ সম্পৰ্কে বিশেষ খবৰ নাৰাখো বা তথ্যও সহজে উপলব্ধ নহয়। সুৰক্ষিত বনাঞ্চল আৰু সংৰক্ষিত বনাঞ্চলক লৈ জুবিন গাৰ্গে এটা বিশাল প্ৰকল্পৰ কামত বহুখিনি আগবাঢ়িছিল। তেওঁৰ ইচ্ছা আছিল অসমৰ সকলো সুৰক্ষিত বনাঞ্চল (ৰাষ্ট্ৰীয় উদ্যান আৰু অভয়াৰণ্য) আৰু ৰিজাৰ্ভ ফৰেষ্ট বা সংৰক্ষিত বনাঞ্চলক লৈ এলানি তথ্যচিত্ৰ নিৰ্মাণৰ। এয়া অ’টিটি প্লেটফ’ৰ্মৰ জৰিয়তে সম্প্ৰচাৰ কৰাৰ কথাও ভাবিছিল। আমাৰ আপোন মানুহখিনিয়েও জানিব, উপভোগ কৰিব আমাৰ এই বিনন্দীয়া প্ৰাকৃতিক শোভা, আৰু বিশ্ববাসীয়েও পৰ্যটনৰ ক্ষেত্ৰখনো লাভান্বিত হ’ব, কিন্তু সময়ে অনুমতি নিদিলে।

‘জুলু’ৰ কথা হয়তো আমি সৰহভাগেই জুবিনৰ মুখত শুনিছো। বন-বন্যপ্ৰাণীৰ সংৰক্ষণৰ প্ৰতি জুবিনৰ সদিচ্চাৰ বাবেই সম্ভৱ হৈছিল সেই বিষয়-বস্তুৰ নিৰ্বাচন। বনৰীয়া ম’হ জুলুক লৈ আন এখন সপোনৰ চিনেমা নিৰ্মাণ কৰিব বিচাৰিছিল তেওঁ। কিন্তু সেই আশাও অসম্পূৰ্ণ হৈ ৰ’ল। সময়ক জুবিনে এইবাবেই হয়তো ভয় কৰিছিল।

ৰ’দ ৰ’দ আজি কেনি পাওঁ...

গুৱাহাটীৰ খাৰঘূলিত জুবিন গাৰ্গৰ ঘৰটো নিৰ্মাণৰ সময়ত তিনিজোপা গছ – জলফাই, অমৰা আৰু কদৈ কাটিব লগা পৰিস্থিতি এটাৰ উদ্ভৱ হ’ল। জুবিন গাৰ্গৰ যুক্তি— গছকেইজোপা জুবিনতকৈ আগতে সেই ঠাইত আছে, গতিকে তেওঁ গছকেইজোপা কিয় কাটিব? সেই ঠাইত গছকেইজোপাৰ অধিকাৰহে বেছি। জুবিনৰ এই অনুভৱ উপলব্ধিৰ বিপৰীতে বেছিসংখ্যক গৃহস্থৰ বা বিভাগৰ কিবা নিৰ্মাণকাৰ্যৰ আৰম্ভণিতে প্ৰথম কাম হ’ল চৌহদৰ গছবোৰ কাটি ঠাইখন মুকলি কৰি লোৱা। ৰাস্তা এটা, দলং এখন, ফ্লাই অ’ভাৰ এখন নিৰ্মাণ কৰিম বুলিলেও প্ৰথম কাম একেটাই— গছ, নদী, জলাশয় আদিৰ বুকুত প্ৰথম ঘাপটো মৰা। এই সোঁতৰ বিপৰীতে জুবিনে প্ৰায়েই নিজৰ কৰ্মৰ উদাহৰণেৰে ৰাইজক, চৰকাৰক প্ৰকৃতি তথা বন্যপ্ৰাণী সংৰক্ষণৰ গুৰুত্বৰ প্ৰতি সচেতন হ’বলৈ আহ্বান জনাইছিল। গছ থাকিলেহে চৰাই আহিব— এই কথাটোও জুবিন গাৰ্গে দীঘলীপুখুৰী পাৰত বহি জনাবলগীয়া হোৱাত নি(য়ে) দুখ পাইছিল। দীঘলীপুখুৰী পাৰৰ গছবোৰ, সেই গছৰ ওপৰত নিৰ্ভৰ কৰি থকা অসংখ্য জীৱৰ অধিকাৰৰ বাবে সজোৰে মাত মাতিছিল। গুৱাহাটীৰ জোনালীস্থিত জুবিনৰ ‘জেদ জি’ ষ্টুডিঅ’ৰ চৌহদটোক সেউজীয়া কৰি ৰাখিছিল। কিন্তু ৰাতি গছবোৰৰ ওচৰত লাইট দিয়া নাছিল। কাৰণ নিশাচৰ চৰাই, বাদুলী আদিয়ে পোহৰৰ পৰিবেশৰ স’তে খাপ খাবলৈ অসুবিধা পালে সেই ঠাইলৈ নহা হ’ব। এইধৰণৰ বিজ্ঞানসন্মত মানসিকতা, সচেতনতা, দায়িত্ববোধ কিমানৰ আছে বাৰু?

জুবিনে উপলব্ধি কৰাৰ দৰে গছৰ অধিকাৰ, বন্যপ্ৰাণীৰ অধিকাৰ, নৈ-পাহাৰখনৰো যে অধিকাৰ থাকিব পাৰে- আমি বাৰু কেতিয়ালৈ সঠিকভাৱে উপলব্ধি কৰিবলৈ সক্ষম হ'ম? হ'মনে কেতিয়াবা? প্ৰকৃতিপ্ৰেমী জুবিনে পশুৰ বলি বিধানৰো বিৰোধিতা কৰিছিল। এই কাৰ্যক তেওঁ নিষ্ঠুৰতা বুলিয়েই ভাবিছিল। এনে কামৰ বাবে তেওঁক পেটা ইণ্ডিয়াই (PETA) 'হিৰো টু এনিমেল' (Hero to Animal) বঁটাৰে সন্মান প্ৰদান কৰিছিল।

সংগীতৰ মাজেৰেও জুবিনে আমাক সজাগ কৰিবলৈ নিৰন্তৰ চেষ্টা কৰিছিল। জুবিনৰ সেই অসমীয়া-হিন্দী মিশ্ৰিত গানটোৱে মন মগজুক জোকাৰি যায়-

হে শুনা শুনা ৰাইজ হেৰা
পাহাৰৰ সেউজীয়া ৰংবোৰ নোহোৱা হ'ল
কোনোবা বনিকে আহি ধনৰ টোপোলা ঘটি
পাহাৰকো বেচি থৈ গ'ল
ৰংবোৰ নোহোৱা হ'ল....
....চুন'ৰে চুন'ৰে ভাই
পাহাৰ কী হৰিয়ালী
নাজানে খোঁ গ্যেয়ী কাঁহা...
পেৰ পথো কী সংগ্ হী হমে ৰেহনা....

গছ-বন, পাহাৰ-অৰণ্য, নৈ-জলাশয়ৰ স্বকীয়তাক অনিষ্টসাধন নকৰাকৈ আমাৰ উন্নয়নৰ সপোনবোৰ পূৰ কৰিব পৰাকৈ আমি মন চিন্তা প্ৰজ্ঞাৰ ধনী হ'ব পাৰিছোনে? এই দিশত জুবিন ঈৰ্ষণীয়ভাৱে ধনী আছিল। মানৱদৰদী জুবিন গাৰ্গে বিচাৰি থকা অসমখনৰ প্ৰাকৃতিক সৌন্দৰ্য আৰু প্ৰাচুৰ্যক আমি ধৰি ৰাখিবলৈ পাৰিমনে? তেওঁ নিজে কৰি দেখুওৱাৰ দৰে আমি অন্ততঃ ব্যক্তিগত পৰ্যায়ত হাতে-কামে সামান্য অৰিহণা যোগাব পাৰিলেও জুবিনৰ প্ৰয়াস সাৰ্থক হ'ব। আমি নিজৰ বাবে, প্ৰকৃতিৰ বাবে, জুবিনৰ বাবে এচেৰেঙা ৰ'দ হ'বলৈ পাৰিমনে? সেই ৰ'দ আজি কেনি পাওঁ...?



কিংবদন্তি শিল্পী জুবিন গাৰ্গক শেষ বিদায় জনাবলৈ অগণন গুণমুগ্ধ



SOLASTALGIA

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(1)

A few months ago, I set out on a trail towards Deepor Beel, hoping to spend the day watching migratory birds. It had long been a ritual for me between January and April, I would visit the wetland at least once to observe the annual arrival of winter visitors. This time, however, it was after a gap of two years. The places where I once watched flocks of Cotton Pygmy Geese, Ferruginous Ducks, and Northern Shovelers had changed beyond recognition. Rows of apartment buildings now stood where open waters and marshes once stretched across the landscape. A newly constructed road cut through the area. I spent a considerable amount of time simply trying to locate the wetland itself. And the birds? Far away, in the shrinking patch of water that somehow survives amidst towering apartment blocks, I found only a few whistling ducks, a couple of cormorants drying their wings in the winter sun, and a handful of purple swamphens. The migratory birds seemed to have disappeared.

(2)

During Bohag Bihu, I travelled to my grandmother's village in Kusumtola. It had been nearly a year since my last visit. Everyone spoke of how convenient bus travel had become these days. New bypass roads had shortened distances and reduced travel time. I was encouraged enough to board a bus and set off alone. Yet when it was time to get down, I struggled to recognize the place. For years, a giant fig tree near Tyagbir Hem Baruah College had served as my landmark. The moment I spotted it through the bus window; I knew where I was. I would signal the conductor to stop, and from there the road home was familiar. This time, I kept searching for the tree until I had crossed Kusumtola and reached Sootea. The tree was gone.



(3)

One of my closest friends lives and works at the Assam Textile Institute in Ambari, Guwahati. During our student days, I often visited her hostel in the evenings. At the entrance of the campus stood several magnificent deodar trees with dense foliage that one could hardly notice an institution hidden behind them. The trees gave the place a character of its own and a sense of quiet permanence. A few days ago, I went to meet her again. This time, I had to cross a flyover. It took me nearly twenty minutes to find the institute. The landscape had changed so dramatically that I struggled to understand which road led where. The place that I had once known intimately felt unfamiliar, as though I were navigating a city I had never visited before.

The roads had become strangers.

Sometimes I wonder whether everything can truly change so quickly. When familiar places transform beyond recognition, something stirs within us as well. We begin to lose confidence in returning to places we once knew. The excitement of revisiting old places is gradually replaced by uncertainty. Places where we once wandered freely and without thought suddenly feel foreign. Increasingly, I notice that everything seems to be becoming the same. The roads look alike. The buildings look alike. Schools and colleges resemble one another. The flyover in Diphu, the flyover at Six Mile in Guwahati, the flyover in Lakhimpur, somehow they all seem to follow the same design. The pillars carry identical painted images of birds, trees, and nature.

The fig tree in Kusumtola.

The deodar trees of Ambari.

The birds of Deepor Beel.

The bakul tree beside the Lakhimpur bus stand.

The silk cotton trees along the Jia Bharali.

The golden showers that lined the roads of Gohpur.

These were not merely landmarks. They carried memories and held stories. They gave identity to places and meaning to journeys. Through them, landscapes became personal. Today, our landmarks are names such as “Lake View Apartment” and “Skyline Complex.” They may help us navigate a city, but they do not carry the warmth of memory. Places that were once familiar now feel strangely detached from the lives we once lived within them.

This feeling, however, is not unique. Almost three decades ago, Australian philosopher and environmental scholar Glenn Albrecht proposed a term to describe the emotional distress caused by the degradation and transformation of one’s home environment: solastalgia. The word combines the Latin solacium, meaning comfort or solace, with the Greek algia, meaning pain, suffering, or grief. Albrecht used it to describe the profound sense of loss people experience when environmental change alters the places they call home. Unlike nostalgia, which is the longing for a place or a memory from which one is absent, solastalgia is the pain of remaining in a place that is itself disappearing. It emerges when unwanted environmental transformations make people feel powerless, displaced, and disconnected, even while they continue to live in the same landscape.

Perhaps so many of us carry an unspoken sadness today. We still live in the same towns, travel the same roads, and return to the same places. Yet something essential has changed. The wetlands are smaller, the trees are gone, the birds no longer arrive, and the landmarks of memory have been replaced by concrete and glass. Though the geography remains, but the sense of home does not. And somewhere in that quiet space between memory and transformation, between belonging and loss, lies the ache called solastalgia.

THE PEOPLE BEHIND THE PROTECTION: A SUMMER WITH FRINGE VILLAGERS OF MANAS NATIONAL PARK



Manashjyoti Ray

(The author is a General Member of Aaranyak and a student of Abhayapuri College)

During my summer internship in 2025 at the Kuklung Range of Manas National Park and Tiger Reserve, I took part in a study titled “Fringe Villagers’ Participation in Conservation and Perception about Manas Tiger Reserve.” What began as an academic requirement soon became a profound lesson in the relationship between people, wildlife, and conservation. Before fieldwork, we attended a briefing at the Directorate Office, where forest officials and biologists shared insights about the reserve’s biodiversity. I was particularly fascinated by stories of elephants—how they remember traditional routes and sometimes outsmart electric fences. Eager to witness wildlife up close, our group set out for the fringe villages near Kuklung Range.

We faced an early challenge: communication. Most villagers were from the Bodo community and preferred speaking Bodo. A forest guard accompanied us and acted as an interpreter. Initially, approaching households felt awkward, but over time we grew more confident. Though I secretly hoped to see elephants or monkeys, we never encountered any—an electric fence had been installed months before our arrival. Instead, we saw snakes, butterflies, and many birds, though most vanished before we could photograph them.

As a Botany student, I was delighted to find several orchid species growing naturally. It wasn’t their flowering season, but seeing them thrive in the wild was exciting.

The villagers’ lives left the deepest impression. At first glance, life seemed peaceful—green surroundings, fresh air, and simplicity. But behind this calm lay real struggles. Most families lived in mud or semi-pucca houses. Electricity was often unreliable, and drinking water was a serious concern. Some villagers walked long distances to collect water. Healthcare was another major issue - many had to travel far for treatment, and some could not afford it at all.

Two children I met stood out. One was a Class IX student with hearing and speech impairments, yet doing well in school, much to his mother’s pride. Another young boy could not speak but attended school regularly and helped his mother with chores. Their resilience reminded me that ability is not measured by physical condition.

Agriculture, mainly areca nut (betel nut) cultivation, was the primary livelihood. However, farmers often sold their produce below market rates. Wild elephants and monkeys frequently destroyed crops. Drought had also hit hard—some farmers could not even transplant paddy seedlings. Yet, despite these hardships, villagers showed deep agricultural knowledge. They practiced crop rotation, maintained kitchen gardens, and reared livestock like cows, goats, chickens, and especially pigs—an integral part of traditional Bodo households. The villagers’ hospitality touched us deeply. Instead of tea, they often offered betel nut and leaves. Our forest guard gracefully accepted, saving us from awkward refusals. Through such moments, we learned local customs rarely found in textbooks.

Ultimately, this internship taught me that conservation is not just about protecting wildlife. It is equally about understanding and supporting the communities living alongside it. The people of Manas are not separate from conservation - they are essential to it.

Beyond individual hardships, I was struck by the strong sense of community among the villagers. Neighbors helped each other during emergencies, whether it was repairing a damaged fence after an elephant visit or sharing water during dry spells. Women played a central role in maintaining kitchen gardens and managing small livestock, often supplementing household income by selling eggs, vegetables, or homemade items in local markets. Young boys and girls, after school hours, could be seen helping their parents with farming or fetching water. This collective effort and shared responsibility created a quiet but powerful social fabric. It made me realize that while external challenges like wildlife conflict and drought were real, the internal strength of the community was equally remarkable. Another important realization was the villagers' pragmatic attitude toward conservation. They did not oppose the electric fence or the protected area—in fact, many acknowledged that it reduced elephant raids to some extent. However, they also felt that conservation policies often overlooked their needs. For instance, crop compensation schemes were slow or inadequate, and there was little support for alternative livelihoods. Some villagers suggested that if they received timely assistance for fencing their fields or access to better irrigation, conflicts could decrease significantly. Listening to them, I understood that sustainable conservation cannot succeed without addressing local grievances. People will protect wildlife only if they themselves feel protected and valued.

Looking back, my time in Kuklung Range was far more than an academic exercise. The forests showed me orchids, birds, and stories of clever elephants. The villagers taught me resilience, tradition, and the real meaning of coexistence. Conservation, I realized, is the balance between nature and development, ensuring both wildlife and local communities can thrive together.



Scenes from the field of survey, Kuklung Range, Manas National Park



REIMAGINING GUWAHATI: ECOSYSTEM-BASED SOLUTIONS FOR URBAN FLOOD RESILIENCE

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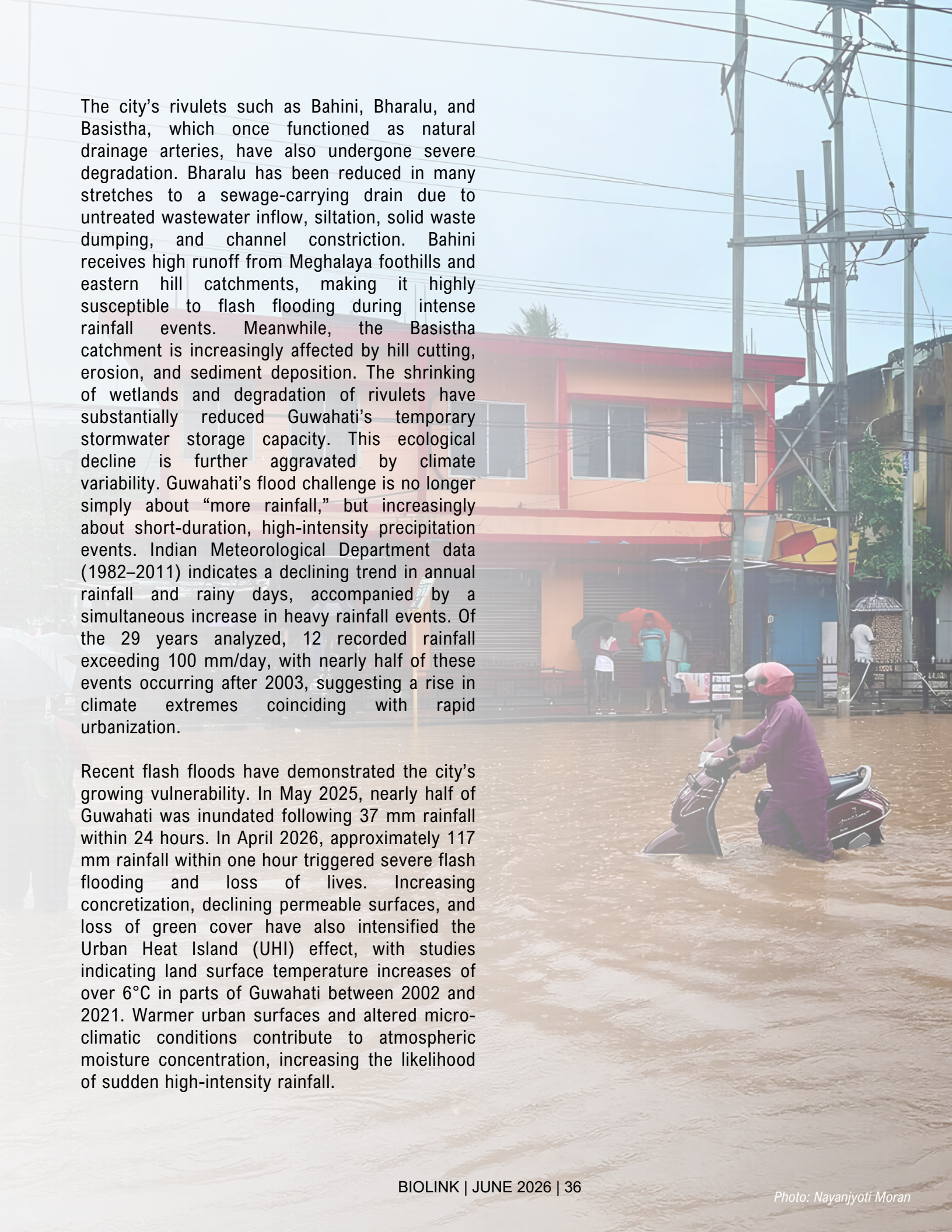
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From a historic betel-nut trading centre to the gateway of Northeast India, Guwahati has emerged as the region's prime urban and commercial hub, connecting India with Southeast Asia. With a legacy dating back to ancient Kamarupa, the city's modern urban transformation accelerated after 1972, when Dispur became the capital of Assam following the creation of Meghalaya. This political shift led to the relocation of government institutions, administrative offices, and associated residential infrastructure, laying the foundation for Guwahati's metropolitan growth. The fastest phase of urban expansion began during the liberalization and migration era of the 1990s. Guwahati's growing strategic importance triggered large-scale migration from across Assam and neighbouring states. This period witnessed a real estate boom and rapid spatial expansion along corridors such as GS Road, Beltola, Six Mile, Panjabari, and Khanapara. The proliferation of shopping malls, apartment complexes, private hospitals, educational institutions, coaching centres, and service-sector businesses transformed Guwahati from a medium-sized town into Assam's dominant primate city.

According to the 2011 Census, Kamrup Metropolitan district, which encompasses Guwahati, had a population of 12.54 lakh, accounting for nearly 4% of Assam's population despite occupying a relatively small geographical area. Land-use studies indicate that between 1990 and 2020, Guwahati's built-up area increased by 147.5%, while other estimates suggest urban expansion exceeded 103% over three decades, largely extending southward and south eastward along NH-37. In effect, Guwahati has more than doubled its urban footprint within a single generation. However, this expansion has largely been haphazard and ecologically unsustainable. Inadequate land-use regulation and fragmented urban planning have progressively altered or destroyed natural drainage systems. Wetlands, rivulets, and low-lying retention areas that historically moderated stormwater have been encroached upon, fragmented, or filled for construction. Borsola-Sorusola Beel, an important retention basin for central Guwahati, has significantly shrunk due to landfilling and urban pressure. Silsako Beel, once spread over nearly 450 acres, was reduced to around 80 acres before restoration efforts were initiated, with current plans targeting recovery of nearly 270 acres and restoration of 3.5 million cubic metres of storage capacity. Similarly, Deepor Beel, Assam's only Ramsar site and Guwahati's largest natural stormwater reservoir, has reduced from an estimated 40 sq. km historically to an effective wetland area of only 13–15 sq. km, with a notified protected area of 6.89 sq. km.

The city's rivulets such as Bahini, Bharalu, and Basistha, which once functioned as natural drainage arteries, have also undergone severe degradation. Bharalu has been reduced in many stretches to a sewage-carrying drain due to untreated wastewater inflow, siltation, solid waste dumping, and channel constriction. Bahini receives high runoff from Meghalaya foothills and eastern hill catchments, making it highly susceptible to flash flooding during intense rainfall events. Meanwhile, the Basistha catchment is increasingly affected by hill cutting, erosion, and sediment deposition. The shrinking of wetlands and degradation of rivulets have substantially reduced Guwahati's temporary stormwater storage capacity. This ecological decline is further aggravated by climate variability. Guwahati's flood challenge is no longer simply about "more rainfall," but increasingly about short-duration, high-intensity precipitation events. Indian Meteorological Department data (1982–2011) indicates a declining trend in annual rainfall and rainy days, accompanied by a simultaneous increase in heavy rainfall events. Of the 29 years analyzed, 12 recorded rainfall exceeding 100 mm/day, with nearly half of these events occurring after 2003, suggesting a rise in climate extremes coinciding with rapid urbanization.

Recent flash floods have demonstrated the city's growing vulnerability. In May 2025, nearly half of Guwahati was inundated following 37 mm rainfall within 24 hours. In April 2026, approximately 117 mm rainfall within one hour triggered severe flash flooding and loss of lives. Increasing concretization, declining permeable surfaces, and loss of green cover have also intensified the Urban Heat Island (UHI) effect, with studies indicating land surface temperature increases of over 6°C in parts of Guwahati between 2002 and 2021. Warmer urban surfaces and altered micro-climatic conditions contribute to atmospheric moisture concentration, increasing the likelihood of sudden high-intensity rainfall.



Addressing Guwahati's recurring flash floods therefore requires a paradigm shift from conventional drainage-centric interventions to integrated urban hydrological restoration. While drain expansion, pumping stations, and desiltation remain important, these measures alone cannot resolve a crisis rooted in ecological degradation. Wetlands such as Borsola-Sorusola, Silsako, and Deepor Beel must be treated as critical urban flood infrastructure through desiltation, restoration of feeder channels, revival of hydrological connectivity, and uncompromising no-development buffer zones. Similarly, Bahini, Bharalu, and Basistha require rejuvenation as functional blue corridors through channel resectioning, encroachment removal, sewage and solid waste interception, and bio-remediation using constructed wetlands and riparian vegetation buffers.

Bio-engineering interventions should also be prioritized in degraded hill catchments through vetiver plantation, bamboo crib walls, coir geotextiles, contour trenches, vegetative gully plugs, and live check dams to stabilize slopes, reduce erosion, and moderate runoff velocity. Simultaneously, Guwahati must transition toward a blue-green and sponge city model by incorporating permeable pavements, bioswales, rain gardens, detention parks, rooftop rainwater harvesting, and urban afforestation into planning regulations. Urban flood management must move beyond ward-level responses to catchment-based planning integrating rainfall-runoff modelling, wetland storage accounting, drainage carrying capacity assessment, and future climate projections. Strengthened coordination among government agencies, community-based organizations, and citizen forums is essential to align infrastructure development with ecological restoration.

Guwahati's recurring flash floods are no longer merely drainage failures, but manifestations of a deeper hydrological imbalance driven by rapid urbanization, wetland loss, altered drainage morphology, and climate variability. Protecting wetlands, restoring rivulets, stabilizing hill ecosystems, and mainstreaming ecosystem-based planning are therefore essential investments for the long-term resilience and sustainability of Assam's fastest-growing urban centre.



BEYOND THE CANOPY: LIVES, LANDSCAPES, AND LESSONS FROM JHARKHAND

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Sab man ke Johar!

Meaning: Wishing Johar to all.

Johar is a traditional greeting widely used across Jharkhand's Indigenous communities. More than a simple salutation, it conveys respect, goodwill, and a recognition of shared humanity.

This photo essay breaks away from the conventions of technical reporting. While working on the socio-economic component of Aaranyak's Project Maximus across the forested landscapes of Jharkhand in the month of April and May, I encountered stories that extended far beyond the scope of my assignment. What follows is not a comprehensive account of the state, but an emic glimpse into the landscapes, homes, markets, and lives I encountered along the way.

Before meeting the people of Jharkhand, I encountered its landscape. Forests stretched into rolling hills, rivers cut through rocky terrain, and winding roads connected scattered settlements. Unlike the crowded urban centres specifically of Ranchi and Jamshedpur, where rapid growth and in-migration have enumerated most of the social fabric, many villages here continue to breathe at a slower pace. These are not untouched wildernesses but lived landscapes, where forests, farms, water, and settlements exist in constant conversation. Homes emerge from the greenery, fields dissolve into forest edges, and daily life unfolds beneath sal-covered hills.

Such environments shape more than livelihoods. They influence how people relate to one another, how communities form attachments to place, and how identity becomes intertwined with the landscape itself (Kaplan, 1995). Yet these landscapes are not free from challenges. Many forest-fringe communities remain distant from essential services, with limited access to healthcare, education, transport, and livelihood opportunities. Geographic isolation often amplifies vulnerabilities, and everyday life is often shaped by uncertainties that are less visualised in a day's visit. But what stands out is the persistence of community, adaptation, and connection to place.

The lush Sal forests of Saranda, among the largest contiguous Sal forests in Asia.

Photo: Barnali Chakraborty



*A village landscape through the hills of East Singhbhum district, where forests, fields, and settlements merge into a shared landscape.
Photo: Koushik Debnath*



A river flowing through the forests of Porhat district, sustaining both wildlife and local communities. Photo: Barnali Chakraborty



A settlement in Porhat district, surrounded by greenery and rolling terrain. Photo: Koushik Debnath

Mahua: A Forest Economy in Bloom



Photo: Barnali Chakravorty



Photo: Sahil Das



Photo: Barnali Chakraborty

The mahua season marks one of the most important livelihood cycles across Jharkhand's forest-fringe communities. As mahua flowers mature and begin to fall (In the 1st photograph, the flowers in the lower portion of the bunch are about to fall), families prepare for collection, often clearing and, at times, burning the ground beneath the trees to make gathering easier (Photo 2), a practice that often contributes to forest fires. Once collected, the flowers are carefully dried in household courtyards for storage, sale and production of traditional mahua fermented drink (Photo 3).

They are taken to local markets or sometimes sold within the village by the villagers or collectors of mahua (in the 4th Photograph, the old man is carrying mahua, to the nearby market for sale). From children to the elderly, community members participate in this seasonal activity, reflecting the collective nature of forest-based livelihoods. As a key non-timber forest product (NTFP), mahua contributes to household income, food security, and social cohesion, illustrating how forests continue to shape both the economy and social life of rural Jharkhand (Saxena, 2003; Shackleton & Pandey, 2014).



The Haat: Where Community, Cohesion Meets Commerce





The journey of forest produce does not end in the village. Weekly markets (haats), serve as vibrant social and economic spaces where livelihoods, relationships, and local identities intersect. Beneath the shade of old trees (the 1st and the 2nd photograph of the section is of weekly market in Ramjol village in Simdega district), villagers gather not only to buy and sell produce, household goods, and forest products, but also to exchange news, maintain social ties, and participate in community life. The bustling market lanes of Porhat and Saranda districts (Photos 3 and 4) reveal the haat's role as a rural institution that connects remote settlements to wider economic networks. Such shared spaces foster social capital and collective belonging, strengthening the trust and reciprocity that help communities navigate everyday challenges (Putnam, 2000). More than a marketplace, the haat remains a living social space where the economic and social fabric of rural Jharkhand continues to be woven weekly, earlier through barter, now with money, weekly.



Water, Memory and the Landscape of Everyday Life; A life between Scarcity and Serenity

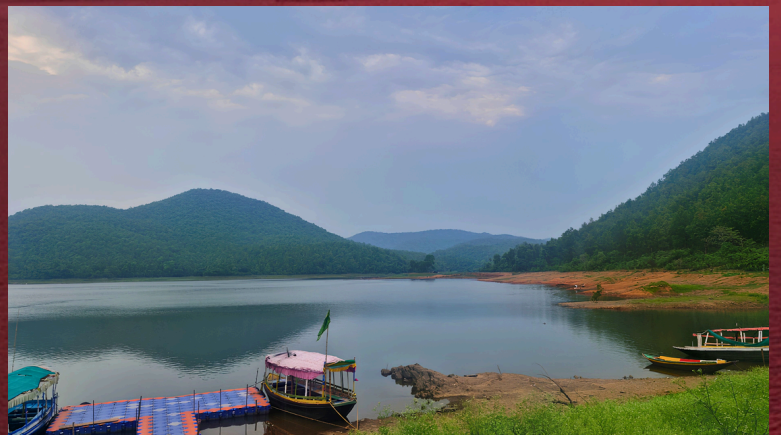
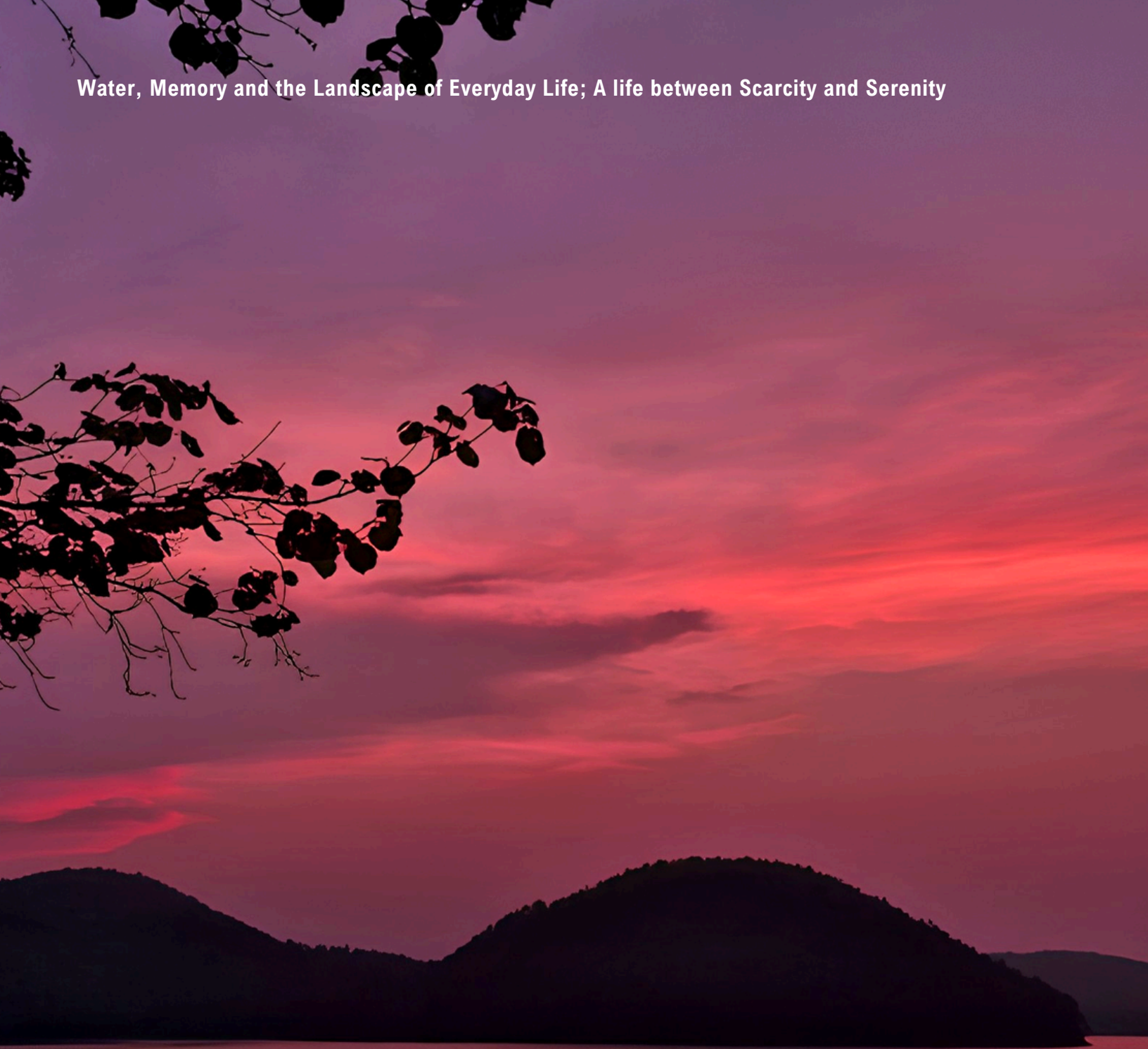




Photo- Koushik Debnath



Photo: Ayan Pramanik





Jharkhand receives 1,100-1,400 mm of annual rainfall, yet remains water-stressed for most of the year. The state's plateau topography causes nearly 80% of surface water and 74% of groundwater to flow out of the state, creating what is often described as a "topographical drought" despite abundant monsoon rainfall. Nearly 80% of Jharkhand is considered drought-prone, making water storage structures central to both livelihoods and survival (Central Ground Water Board [CGWB], 2024; Government of Jharkhand, 2021).

This story begins at Chandil Dam, where the first photograph captures a deep red sunset spreading across the Subarnarekha reservoir. Built under the Subarnarekha Multipurpose Project during the 1980s, Chandil remains one of Jharkhand's largest and deepest reservoirs, storing water in a landscape that struggles to retain it. The second photograph shows Burudi Dam (Kalchiti, Baghmuri, East Singhbhum), where forests, hills and water merge into a landscape that supports local livelihoods while offering moments of quiet beauty.

The third photograph follows a canal carrying water from Chandil through the Mango Range of Jamshedpur Wildlife Division, with the forested slopes of Dalma Wildlife Sanctuary in the background. Such canals illustrate how engineered water systems connect reservoirs to farms, settlements and industries, extending the benefits of stored water far beyond the dam itself.

In contrast, the fourth photograph shows the Sankha River in Simdega district, a natural river system where three interfaces meet water, forested land and sky. These ecotones are vital for biodiversity, groundwater recharge and community livelihoods, while also shaping people's conscience to place.

The fifth photograph shifts to Dimna Lake, an artificial reservoir constructed in 1944 to address Jamshedpur's growing water needs. Nestled at the foothills of the Dalma Hills, Dimna continues to serve as one of the city's principal drinking water sources and remains among the most recognisable water landscapes in Jharkhand (Government of Jharkhand, n.d.; Tata Steel, 2011).

The sixth photograph shows Pakka Baandh, Kurdeg (Simdega), believed by local communities to date back to the British period. Alongside large dams and reservoirs, such older water structures reflect a long history of retrospective data, community adaptation to seasonal water uncertainty.

The final photographs bring the narrative back to people. A fish seller waits under a small patch of shade beside the reservoir. Another man fishes along the bank. A woman washes clothes at the water's edge. These scenes reveal water not merely as infrastructure, but as a living social space. Across rural Jharkhand, reservoirs and rivers support fisheries, household chores, livestock, irrigation and seasonal incomes simultaneously.

Environmental psychology often describes water bodies as places of restoration, belonging and collective memory. In these photographs, water is both necessity and refuge, a source of livelihood during hardship and a source of calmness at day's end. The crimson skies over Chandil, the still waters of Dimna, the flowing Sankha and the everyday interactions along their banks together tell the story of a state where abundance and scarcity coexist, and where communities continue to build their lives around water (Kaplan & Kaplan, 1989).



The Psychology of Home: Identity, Memory and Belonging





Across rural Jharkhand, homes reflect a distinctive expression of the relationship between people, culture, and place. There are both traditional mud houses alongside stone and brick structures. Painting is observed to be a very common expression of the state. Their walls painted in bold shades of blue, green, yellow, and red. Floral motifs, geometric designs, and hand-painted murals animate walls, while the names of newly married couples are often proudly inscribed on house fronts, transforming homes into public records of family milestones. Not only homes, even shops are also painted in such bold colours. These visual traditions echo the artistic heritage of Jharkhand, particularly the Sohrai and Khovar mural traditions, where walls become spaces for celebrating harvests, marriages, and community life (Imam, 2011). The impulse to decorate and narrate through colour extends beyond domestic spaces. The painted tunnel, adorned with vivid depictions of wildlife and natural landscapes, mirrors the same aesthetic traditions visible on village homes and walls. Also, the painting a small boy with a message to sleep early is in the walls of a village in Palkot expresses skill and interest in this form of cultural expression.

With nearly 76% of Jharkhand's population living in rural areas (Census of India, 2011), homes remain central to social life. But poverty is also visible long before mere statistics are. There are also modest mud houses, weathered brick walls, uneven courtyards and tiled roofs weighed down with stones speak of lives shaped by uncertainty, seasonal storms and limited resources, still courtyards, shaded verandas, and painted facades extend beyond their practical function, reflecting pride, memory, and attachment to place. The houses pictured here are not merely shelters; they are lived spaces where architecture, environment, and culture come together to tell stories of community, continuity, and everyday life.







Photo: Barnali Chakraborty

Life in the villages of Jharkhand unfolds through relationships between people and their environment. Moments of humour comes out very naturally-A young goat stares at the camera with an expression that seems to say, "Put me down already," while a sheep, wearing a metal pot around its neck unintentionally strikes a pose worthy of a village fashion show. In Saranda, children gather beneath sprawling trees and climb branches with the ease of seasoned acrobats, turning the forest into both playground and companion. These moments of spontaneity sit alongside quieter scenes: an elderly man stepping out of his home or the woman busy in her chores in Dalma, carrying the routines of a lifetime, and a mother in Porhat walking across an open field with one child tied securely to her back while another holds her hand-a powerful image of care, responsibility, and continuity.



From a social-psychological perspective, these photographs reveal how identity is shaped through everyday relationships and shared spaces. Caregiving, play, work, and interactions with animals are not isolated activities but part of a collective way of life that fosters belonging and community attachment (Proshansky et al., 1983). In Jharkhand, where nearly 76% of the population resides in rural areas (Census of India, 2011), such social bonds remain central to daily life. At the same time, the images of children invite reflection on broader developmental challenges. According to the National Family Health Survey (NFHS-5), 40.1% of children under five in Jharkhand are stunted and 67.3% are anaemic (IIPS & ICF, 2021). Yet these photographs restrict reducing childhood to numbers alone. Instead, they capture curiosity, affection, playfulness, and resilience, the ordinary experiences through which community life is continually renewed.

Photo: Barnali Chakraborty



More than a decade after India's last census, many decisions affecting these landscapes continue to be made using outdated demographic realities. Yet the challenge extends beyond numbers. It is about whose knowledge counts, whose voices are heard, and whose futures are imagined. If there is one lesson learnt from this journey, it is that sustainable development cannot be imposed upon communities; it must be built with them.

My sincere thanks to the people of Jharkhand who welcomed me into their villages, homes, and lives. I am also grateful to Aaranyak and the Project Maximus team, specifically of Jharkhand for the opportunity to undertake this journey and taking me to places!

Johar to all.

Overall, in Jharkhand's forest-fringe villages, nature is not a distant resource or a weekend retreat. It remains an integral part of everyday life, quietly influencing movement, relationships, and community identity. Jharkhand's villages challenge some of our most persistent assumptions. In places often described through the language of poverty and underdevelopment, I encountered knowledge, craftsmanship, ecological wisdom, strong social ties, and remarkable resilience. The question, then, is not what these communities lack, but why apart from systems of governance, markets, and public discourse, we as fellow humans so often fail to recognise what people around us already possess.



Yet not every story is told through movement. Sometimes it rests in a face. The lined features and distant gaze of an elder speak of years shaped by labour, loss, resilience, and an intimate familiarity with the rhythms of the land. Photo: Barnali Chakraborty

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বিদ্যালয়ত পানী সংৰক্ষণৰ ওপৰত আৰণ্যকৰ পদক্ষেপ

টিকেन्द्रজিৎ গগৈ

(লেখক আৰণ্যকৰ পৰিৱেশ শিক্ষা আৰু কাৰ্যক্ষমতা বৃদ্ধি বিভাগ (EECBD)-ৰ এজন বিষয়ববীয়া।)

বহনক্ষম শিক্ষা আৰু নৱ-প্ৰজন্ম

বৰ্তমান সময়ত পানী আৰু মাটিৰ বহনক্ষমতাক লৈ সৰ্বত্ৰে গভীৰ চিন্তা-চৰ্চা অব্যাহত আছে। আনকি ৰাষ্ট্ৰসংঘৰ মজিয়াতো মাটিৰ প্ৰসংগই বিশেষ গুৰুত্ব লাভ কৰিছে। নৱেম্বৰ ২০২৫ ত ব্ৰাজিলত অনুষ্ঠিত ৰাষ্ট্ৰসংঘৰ Conference of Parties চমুকৈ COP30 ত মাটি বিষয়ত বিশেষ প্ৰাধান্য দিয়া হয়। COP30 ত মাটিক "as underutilised climate solution" অৰ্থাৎ জলবায়ুৰ দ্ৰুত পৰিবৰ্তনৰ বাবে দায়ী সেউজগৃহ গেছ সমূহৰ অনিয়ন্ত্ৰিত নিৰ্গমন ৰুখিবৰ বাবে এক গুৰুত্বপূৰ্ণ সম্ভাৱনাপূৰ্ণ সমাধান বুলি অভিহিত কৰিছে।

আনহাতে, শেহতীয়াকৈ ২০২৬ বৰ্ষৰ জানুৱাৰীত প্ৰকাশিত ৰাষ্ট্ৰসংঘৰ এক প্ৰতিবেদনত বিশ্বই "Global Water bankruptcy" যুগত প্ৰৱেশ কৰিছে বুলি সতৰ্ক কৰিছে। পৃথিৱীৰ জলাধাৰ ইমানেই অতিমাত্ৰা শোষণ আৰু অৱক্ষয় হৈছে যে ই নিজৰ প্ৰাকৃতিক, স্বাভাৱিক অৱস্থালৈ ঘূৰি আহিব নোৱৰা পৰ্যায়ত উপনীত হৈছে। সাধাৰণভাৱে বুজিবলৈ হ'লে ই নবীকৰণযোগ্য সীমাৰ বাহিৰত অপ্ৰত্যাৱৰ্তনীয় ক্ষতিৰ "স্থায়ী সংকটৰ পিছৰ" অৱস্থাত উপনীত হৈছে বুলি ক'ব পাৰি। UN University for Water, Environment and Health ৰ সঞ্চালক কাভেহ মাদানীয়ে মন্তব্য কৰাৰ দৰে সঁচাকৈ "For much of the world, 'normal is gone"।

সেয়েহে, উল্লিখিত COP30, ৰাষ্ট্ৰসংঘৰ শেহতীয়া প্ৰতিবেদনত বিশ্বব্যাপী মাটি আৰু পানীক বহনক্ষমতা আৰু মানৱ কল্যাণৰ বাবে শীৰ্ষ অগ্ৰাধিকাৰ দিয়াৰ কথাই গুৰুত্ব লাভ কৰিছে। এই প্ৰচেষ্টাৰ অংশ হিচাপে সমগ্ৰ বিশ্বত ভিন্ন স্তৰত বহুমুখী পদক্ষেপ গ্ৰহণ কৰা হৈছে। ভাৰতৰ উত্তৰ পূৰ্বাঞ্চলৰ প্ৰকৃতি আৰু বন্যপ্ৰাণী সংৰক্ষণ সংস্থা- আৰণ্যকে সামৰ্থানুসাৰে পদক্ষেপ গ্ৰহণ কৰিছে। আৰণ্যকে পৰিৱেশ আৰু বহনক্ষম শিক্ষাক সংস্থাটোৰ জন্মলগ্নৰে পৰা আগবঢ়াই লৈ গৈছে।

চহকী আৰু বৈচিত্ৰ্যপূৰ্ণ জনগাঁথনি তথা সংস্কৃতি আৰু জীৱবৈচিত্ৰ্যৰ বাবে উত্তৰ-পূব ভাৰতৰ এক সুকীয়া স্থিতি আছে। এই ভূখণ্ডৰ ২১০ তকৈ অধিক জাতি-জনগোষ্ঠী পৰস্পৰৰ বৈচিত্ৰ্যপূৰ্ণ কৃষ্টি-সংস্কৃতি আৰু ভাষাৰ সমাহাৰৰ সমন্বয়ত অঞ্চলটোৱে অনন্য মাত্ৰা পাইছে। এই সকলো সমাজৰ পৰস্পৰাগত জ্ঞানে প্ৰাচীন কালৰ পৰাই এই অঞ্চলটোক পৰিৱেশিক দিশত সম্ভুলিতভাৱে সমৃদ্ধ কৰি ৰাখিছে। কিন্তু পৰিৱেশৰ দ্ৰুত পৰিবৰ্তন, মানুহ আৰু প্ৰকৃতিৰ মাজৰ সংযোগ দিনক দিনে বিনষ্ট হৈ অহাৰ লগতে জলবায়ু পৰিবৰ্তনৰ ব্যাপক প্ৰভাৱ এই অঞ্চলতো স্পষ্ট হৈ পৰিছে। মাটিৰ গুণগত মান হ্ৰাস, ভূগৰ্ভস্থ পানীৰ সংকট, অনিয়মীয়া বৰষুণ, ভূপৃষ্ঠৰ পানীৰ উৎসমূহৰ অৱনতি আদি এই অঞ্চলৰ মুখ্য পাৰিৱেশিক প্ৰত্যাহ্বান।

এনে প্ৰত্যাহ্বানসমূহৰ মোকাবিলা কৰিবলৈ হ'লে মূলতঃ স্থানীয়ভিত্তিক শিক্ষামূলক পদক্ষেপ অতিকৈ প্ৰয়োজন। ইয়াৰ জৰিয়তে ৰাইজক প্ৰয়োজনীয় জ্ঞান আৰু ব্যৱহাৰিক দক্ষতাৰে সমৃদ্ধ কৰিব পৰা যায়। ইয়াৰ বাবে পৰস্পৰাগত জ্ঞান আৰু আধুনিক বৈজ্ঞানিক চিন্তাধাৰাৰ সংযোজনে প্ৰভাৱশালীভাৱে কাম কৰিব পাৰে, যি বহনক্ষম সম্পদৰ ব্যৱহাৰ তথা পৰিৱেশকল্যাণ নিশ্চিত কৰিব পাৰে।



এনে পৰিপ্ৰেক্ষিতত আৰণ্যকে পৰিৱেশ শিক্ষা আৰু সক্ষমতা বৃদ্ধি বিভাগৰ জৰিয়তে শিক্ষাৰ্থী আৰু জনসাধাৰণৰ মাজত বহনক্ষমতাৰ স্বার্থত অভিজ্ঞতাভিত্তিক শিকন পদ্ধতি (Experiential Learning) আৰু সক্ষমতা তথা দক্ষতা বৃদ্ধিৰ বাবে আহোপুৰুষাৰ্থ কৰি আহিছে। দেখা গৈছে যে এই প্ৰচেষ্টাই পৰিৱেশৰ স্থানীয় সমস্যাসমূহৰ প্ৰতি সমাজৰ দৃষ্টিভংগী তথা সামাজিক আচৰণৰ (Social behaviour) কিছু পৰিমাণে হলেও ইতিবাচক পৰিবৰ্তন আনিবলৈ সক্ষম হৈছে।

বিদ্যালয়ত বহনক্ষম শিক্ষাৰ নতুন দৃষ্টান্ত

বৰ্তমান আৰণ্যকৰ পৰিৱেশ শিক্ষা বিভাগে নিজস্ব কাৰ্যকলাপৰ সমান্তৰালভাৱে ভিন্ন সহযোগী সংস্থা যেনে উইপ্ৰো ফাইণ্ডেশ্যনৰ সহযোগত "Wipro Earthian sustainability education program" নামৰ এক ৰাষ্ট্ৰীয় পৰ্যায়ৰ বহনক্ষম শিক্ষা কাৰ্যসূচী ৰূপায়ন কৰি আহিছে। ৰাষ্ট্ৰীয় শিক্ষা নীতি, ২০২০ (NEP, 2020) -এ বিশেষভাৱে গুৰুত্ব প্ৰদান কৰা অভিজ্ঞতাভিত্তিক শিকন পদ্ধতিকেই আৰণ্যক তথা উইপ্ৰোই ৰূপায়ন কৰা বহনক্ষম শিক্ষাৰ মূল আধাৰ। আৰণ্যকে সমগ্ৰ শিক্ষা অসমৰ সক্ৰিয় সহযোগত ২০২২ বৰ্ষৰ পৰা অসমৰ ১৫ খন জিলাত এই কাৰ্যসূচী ৰূপায়ণ কৰি আহিছে। ইয়াৰ মূল লক্ষ্য হৈছে ছাত্ৰ-ছাত্ৰীক জীৱবৈচিত্ৰ্য, আৱৰ্জনা আৰু পানী এই তিনিটা ক্ষেত্ৰত বহনক্ষমতাৰ ধাৰণা উপলব্ধি কৰিবলৈ হাতেকামে লাগি উৎসাহিত কৰা। এতিয়ালৈকে এই প্ৰচেষ্টাৰ জৰিয়তে অসমৰ ৩৫২ খন বিদ্যালয়ৰ ৪০৫১ গৰাকী শিক্ষাৰ্থী আৰু ৭৭৬ গৰাকী শিক্ষক-শিক্ষয়িত্ৰী উপকৃত হৈছে। বহনক্ষম শিক্ষাৰ এই পদক্ষেপক অসমৰ মাননীয় মুখ্যমন্ত্ৰীৰ লগতে শিক্ষামন্ত্ৰী আৰু কেবাগৰাকী কেবিনেট মন্ত্ৰীয়েও প্ৰশংসা কৰিছে।

জীৱবৈচিত্ৰ্য: পাঠ্যক্ৰমৰ পৰা সংৰক্ষণলৈ

জীৱবৈচিত্ৰ্যৰ ক্ষেত্ৰত বহনক্ষম ধাৰণাটো বুজিবলৈ ছাত্ৰ-ছাত্ৰীসকলক স্থানীয় জীৱবৈচিত্ৰ্য, ইয়াৰ লগত সংস্কৃতি আৰু জীৱিকাৰ সম্পৰ্ক, আৰু লগতে পৰম্পৰাগত জ্ঞানৰ নথি-ভুক্তিকৰণৰ সৈতে জড়িত কৰা হয়। এই কাৰ্যসূচীৰ মাজেৰে ছাত্ৰ-ছাত্ৰীয়ে স্থানীয় জীৱবৈচিত্ৰ্যৰ বিষয়ে গভীৰভাৱে উপলব্ধি কৰাৰ সুযোগ লাভ কৰে। লগতে পাঠ্যক্ৰমৰ জ্ঞানক দৈনন্দিন জীৱন ধাৰণৰ সৈতে সম্পৰ্কিত কৰিবলৈকো সুযোগ পায়। খাদ্য ব্যৱস্থা, জীৱিকা আৰু জলবায়ু পৰিবৰ্তনৰ সৈতে এনে বিষয়ৰ সংযোগ বুজাতো সহায় হোৱা পৰিলক্ষিত হৈছে। আনকি এই কাৰ্যসূচীয়ে বিদ্যালয়ৰ পাঠ্যক্ৰমৰ পৰিপূৰক হিচাপে কাম কৰাৰ লগতে ছাত্ৰ-ছাত্ৰীৰ মাজত বিজ্ঞানসন্মত বিশ্লেষণাত্মক চিন্তাধাৰা আৰু সিদ্ধান্ত গ্ৰহণৰ ক্ষমতা বৃদ্ধি পাইছে বুলি বহু শিক্ষক-শিক্ষয়িত্ৰীয়ে আমাক জানিবলৈ দিছে।

আৰণ্যকে এই বহনক্ষম শিক্ষাৰ জৰিয়তে শিক্ষাৰ্থীসকলক বিদ্যালয়ৰ লগতে ঘৰৰ নিকটৱৰ্তী আৱাসস্থানৰ জীৱবৈচিত্ৰ্য আৰু স্থানীয় উদ্ভিদৰ পৰম্পৰাগত জ্ঞান নথিভুক্ত কৰাৰ বাবে নিয়মিতভাৱে সহায় আগবঢ়াই আহিছে। ফলস্বৰূপে বিদ্যালয় আৰু চুবুৰীয়া ৰাইজৰ মাজত এটা সুসম্পৰ্ক গঢ়ি উঠিছে। তদুপৰি স্থানীয় ৰাইজ আৰু অভিভাৱকৰ মনতো বহনক্ষম শিক্ষাৰ জৰিয়তে সম্পদৰ সদ ব্যৱহাৰৰ বাবে নতুন নতুন ভাৱৰ উদ্বেক ঘটিবলৈ আৰম্ভ কৰিছে।

আৱৰ্জনা ব্যৱস্থাপনা

আৱৰ্জনা ব্যৱস্থাপনাৰ ক্ষেত্ৰত বহনক্ষম ধাৰণা বুজিবলৈ ছাত্ৰ-ছাত্ৰীক আৱৰ্জনা নিৰীক্ষণ আৰু উৎসত পৃথকীকৰণৰ দৰে কাৰ্যৰ জৰিয়তে বিদ্যালয়ত উৎপন্ন আৱৰ্জনাৰ স্থিতি বিশ্লেষণ কৰিবলৈ আৰু ব্যৱহাৰযোগ্য সমাধানৰ দিশসমূহ বিশ্লেষণত জড়িত কৰা হয়। এই পদক্ষেপে বিদ্যালয়খনক 'শূণ্য আৱৰ্জনা' আহিলৈ ৰূপান্তৰিত কৰিব বুলি আমাৰ বিশ্বাস। আনহাতে ছাত্ৰ-ছাত্ৰীক বিদ্যালয়ৰ বাহিৰতো আৱৰ্জনা নিৰীক্ষণ, নথিভুক্তকৰণ, আৰু দায়িত্বশীল আচৰণ গ্ৰহণ কৰিবলৈ উৎসাহিত কৰা হয়। ইয়াৰ ফলত ছাত্ৰ ছাত্ৰী, অভিভাৱক আৰু স্থানীয় ৰাইজৰ মাজত আচৰণগত পৰিবৰ্তন ঘটিবলৈ আৰম্ভ হোৱা দেখা গৈছে।

ইয়াৰ ফলত পানীৰ বহনক্ষমতা বিষয়ত সচেতনতা বৃদ্ধি পোৱাৰ লগতে আচৰণগত ইতিবাচক পৰিবৰ্তন দেখা গৈছে। আগন্তুক সময়ত, আৰণ্যকে পৰিৱেশ শিক্ষা আৰু সক্ষমতা বৃদ্ধি বিভাগৰ জৰিয়তে মাটি আৰু পানীক মুখ্য কেন্দ্ৰ কৰি শিক্ষাৰ্থীসকলৰ মাজত আৰু অধিক বহনক্ষম শিক্ষা প্ৰসাৰৰ বাবে মনোনিবেশ কৰিব যাতে বিদ্যালয়ত পাঠ্যক্ৰমৰ সৈতে মিল ৰাখি বহুমুখী অভিজ্ঞতামূলক শিক্ষাৰ জৰিয়তে নৱ প্ৰজন্মই বহনক্ষম সম্পদৰ ব্যৱহাৰ আৰু দীৰ্ঘম্যাদী পৰিৱেশকল্যাণ নিশ্চিত কৰিব পাৰে।

বহনক্ষম শিক্ষা আমাৰ প্ৰত্যেকৰে বাবে অপৰিহাৰ্য্য মানুহ আৰু আন জীৱকুল বৰ্তি থাকিবলৈ ই অন্যতম পন্থা। সহজ কথাত বহনক্ষম শিক্ষা এক প্ৰায়োগিক শিক্ষা বা অভ্যাস, যি আমাক পৃথিৱীত আৰু কিছু বছৰ বৰ্তি থকাত সহায় কৰিব পাৰে।

Salient Activities (January-June 2026)

- Recognition of Aaranyak's Wildlife Genetics Laboratory under BNSS 2023; conducted the first hands-on training on wildlife genetics and forensic DNA applications.
- Organised the Kajir Ronghangpi Heritage Fair and honoured recipients of the Aaranyak Media Fellowship 2025.
- Conducted Nature Camp 2026 at Hollongapar Gibbon Sanctuary for youth on biodiversity, wildlife, GIS/GPS and field documentation.
- Trained newly recruited Kaziranga forest personnel on wildlife monitoring, safety and field readiness.
- Organised Hoolock Gibbon conservation training for forest staff in Arunachal Pradesh's Namsai Forest Division.
- Conducted wildlife crime mitigation and enforcement awareness programmes for SSB personnel, police officials and community stakeholders.
- Facilitated exposure visits for Elephant Conservation Network volunteers and community members to conservation sites for peer learning and HEC mitigation.
- Organised strategic meetings, awareness campaigns and outreach programmes on human–elephant coexistence across Goalpara, Udalguri, Baksa and Tamulpur.
- Installed and handed over community-managed solar-powered fences in Udalguri and Sivasagar to mitigate human–elephant conflict and protect farmland.
- Promoted beekeeping and distributed bee boxes as livelihood support and a nature-based HEC mitigation measure.
- Conducted multiple first-aid, snakebite response and disaster preparedness trainings for forest staff and local communities.
- Recognition of Dr. Purnima Devi Barman in Forbes India W-Power 2026 for community-based Greater Adjutant conservation.
- Supported livelihood diversification through tea-pruning, plumbing and ginger value-addition trainings and exposure visits.
- Empowered women through water hyacinth handicraft skill development and enterprise promotion around Laokhowa–Burhachapori Wildlife Sanctuary.
- Promoted elephant-resilient crops and alternative livelihoods to reduce economic losses from crop depredation.
- Conducted cattle health and vaccination programmes near protected areas to reduce disease risks and support coexistence.
- Implemented Pollution-Abating Schools initiative with environmental education, waste management and tree-awareness activities.
- Conducted water conservation, safe drinking water, water-testing and school engagement programmes across Assam.
- Organised teacher orientation and knowledge-sharing conclaves on water conservation and environmental education.
- Implemented biodiversity education initiatives including Rhino Goes to School, nature learning programmes and school-based awareness campaigns.
- Conducted awareness programmes on Greater Adjutant Stork conservation in schools outside Assam.
- Organised World Environment Day, plantation drives, documentary screenings, poster competitions and biodiversity awareness campaigns across Assam and Mizoram.
- Facilitated community surveys, health camps and stakeholder consultations to strengthen conservation-linked development initiatives.
- Convened Aaranyak zonal meetings and member consultations to strengthen conservation partnerships and regional action.
- Celebrated national and environmental observances including Republic Day and other conservation awareness events.

Aaranyak



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