







1 - 5 December 2020

Virtual Forum

Ecology is Economy

REGIONAL SESSIONS: FROM SNOWLINE TO THE SEALINE

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Sanctuary Nature Foundation

World Wildlife Fund - India

IUCN - India

Impulse NGO Network

Green Hub

Mountain Partnership

The Energy & Resources Institute (TERI)

Green Guard Nature Organization













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Ecology is Economy

8th Eastern Himalayan Naturenomics[™] Forum 1st – 5th December 2020

ECOLOGY IS ECONOMY - AN INTRODUCTION

COVID-19 has been a stark reminder of human's dysfunctional relationship with nature, as the existing economic system has always acted as a great pressure on our natural environment, and the unfolding pandemic has shone a light on the domino effect that is triggered when one element in this interconnected system is destabilized. Over 30% of Germany's COVID-19 recovery plan invests in renewables and electric vehicles among others — with little going to petrol and diesel automobiles, a staple of the German economy. Forest and timber industry today in Germany, accounts for nearly 1.3 million jobs with an annual turnover of about 170 billion, a country where forests have increased by more than 1 million hectares over the past five decades.

According to World Economic Forum, transforming the food, land and ocean use system has the potential to create business opportunities worth almost \$3.6 trillion and 191 million new jobs over the next 10 years, if the right policies are put in place. Shifting from industrial to regenerative agroforestry also is immediately feasible and would allow us to sequester carbon in the soil at a rate that is sufficient to reverse the crisis. Moreover, doing so would turn a profit, enhance economic and environmental resilience, create jobs, and improve wellbeing in the rural communities.

The Eastern Himalayan capitals and the global community have the opportunity to tackle this ecological crisis and catalyze green growth, but only if we can act courageously and swiftly — and with an eye on the future and its high-intensity risks, not just short-term profits and growth. Only coordinated action by world leaders, communities, business, academics with global, multi stakeholder cooperation — at an exceptional scale and speed — can potentially mitigate the risk and lead towards 'Ecology in the New Economy'.

The green recovery must happen now to be effective, according to the IEA sustainable recovery plan, Investing \$180 billion annually over the next three years to deploy wind and renewable energy could generate huge economic value over the next 25 years, due to short construction times and declining technology costs. Nearly 7 million jobs could be created in construction, manufacturing, operations and maintenance, for sustainable recovery and these could boost global GDP by 3.5% in 2023 above usual levels.

This year's theme of **Ecology is Economy** explored how we can drive this transformation to create the new natural wealth of nations in the Eastern Himalayas through 5 key themes:

- 1. Natural Assets
- 2. Employment
- Net Zero 2030
- Naturenomics™
- 5. Animal-Human Diseases













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Ecology is Economy

Sessions **Speakers** From Snowline to Sealine - Eastern Himalayan Case Studies Bhutan: Indigenous People Sonam Wangyel, Korea University & Forests – A Symbiosis for Om Katel, College of Natural Resources, Royal University of Conservation & People Bhutan Pema Choephyel, Bhutan Trust Fund for Environmental Conservation Jeremy Brooks, School of Environment and Natural Resources, Ohio State University, USA Ugyen Namgyel, Bumthang Forest Division, Bhutan Myanmar: Deforestation, livelihoods & Sein Win, Training Director, Myanmar Journalism Institute potential of indigenous community-led forest Ngwe Lwin, Country programme head for Fauna & Flora International – Myanmar. governance & conservation U Win Myo Thu, Chairman ALARM & Senior Advisor, EcoDev Gaurav Gupta, Conservation Landscape Manager, Dawna Tenasserim Landscape Graham Prescott, University of Bern, Switzerland Nepal: Climate Change & Unsafe Migration Dr. Govind Prasad Thapa, Former Additional Inspector General of Nepal Police Kunal Majumder, India Correspondent of Committee to Protect Journalists Hasina Kharbhih, Impulse NGO Network Saurav Malhotra, Balipara Foundation













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Sessions Speakers

From Snowline to Sealine - Eastern Himalayan Case Studies

Meghalaya: Floral Diversity in the West Garo Hills - Through the Ethnobotany lens

- Swapnil Tembe, IAS, Deputy Commissioner & District Magistrate East, Garo Hills District
- Barnali Dutta, Balipara Foundation
- Binu Mathew, Rural Development and Agricultural Production, NEHU, Tura
- Prof. C. Perinba Suresh, Department of Horticulture, NEHU, Tura
- Naldarine Marak, Department of Forestry, Mizoram University

Sikkim: Green energy posing potential threat of green depletion

- Amit Patro, Sikkim Express
- Dr Mahendra P Lama, Member of Niti Aayog, Professor at JNU
- Gyatso Lepcha, General Secretary of Affected Citizens of Teesta
- Mayalmith Lepcha, President of the Sikkim Indigenous Lepcha Tribal Association
- Himangka Kaushik, Research Analyst at TERI School of Advanced Studies

Tripura: Restoring river ecosystem: Community Approach towards preserving ecological diversity

- Samrat Goswami, Assistant Professor at Dept of Rural
- Management & Development, Tripura University.
- Selim Reza, Tripura Bamboo and Cane Development Centre
- Pawan Kaushik, Regional Director At Centre For Forest-
- Based Livelihoods & Extension, Tripura
- Biswendu Bhattacharjee, Journalist

Nagaland: Community for conservation - A transition from community into hunting

- Siddharth Edake, The Energy and Resources Institute (TERI)
- Bano Haralu, Nagaland Wildlife and Biodiversity Conservation Trust
- Ivan Jimo, Tizu Valley Biodiversity Conservation and Livelihood Network
- Nuklu Phum, Sam Hegginboton University for Agriculture Technology and Science













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Ecology is Economy

| | Sessions | Speakers |
|---|---|---|
| From Snowline to Sealine - Eastern Himalayan Case Studies | | |
| | generating livelihoods opportunities | Shyamkanu Mahanta, Social Entrepreneur Oken Tayeng, Founder, Abor Country Travels & Expeditions Jambey Dondu, President of Environmental Protection Society, Tawang Koj Rinya, IFS,Member Secretary, Arunachal Pradesh State Pollution Control Board |
| | scientific approach to re-invent shifting/jhum cultivation | Bhupesh Chaudhary, IAS, Addl. Secretary Communications technology (ICT) Kalpana Sarathy, Professor & Dean, Tata Institute of Social Sciences, Guwahati Jaydev Mandal, Assistant Professor, Department of Zoology, Madhab Choudhury College John Zothanzama, Mizoram University and Mizoram Sustainable Development Foundation C. Lalengzama, Assistant Professor, Department of Social Work, Mizoram University |
| | Habitats, Communities & Livelihoods | Md. Jahidul Kabir, Forester Mohammad Firoj Jaman, Department of Zoology, University of Dhaka Md Niamul Naser, Chairman & Professor, Department of Zoology, University of Dhaka Abdullah Harun Chowdhury, Professor, Department of Environmental Science, Khulna University Md Noor Alom Sheikh, Freelance journalist & environmental activist Zabed Hossain, Professor, Department of Botany University of Dhaka |
| | of Manipur', losing life due to | Dr Dhurbajyoti Sahariah, Guwahati University T Brajakumar, Director, Directorate of Environment & Climate Change Salam Rajesh, Member, Manipur Wetland Authority Prof Abhinandan Saikia, TISS - Guwahati |













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Bhutan Regional Naturenomics™ Forum

Indigenous People & Forests - A Symbiosis for Conservation & People



- Sonam Wangyel, Korea University
- Om Katel, College of Natural Resources, Royal University of Bhutan
- Pema Choephyel, Bhutan Trust Fund for Environmental Conservation
- Jeremy Brooks, School of Environment and Natural Resources, Ohio State University, USA
- Ugyen Namgyel, Bumthang Forest Division, Bhutan

HIGHLIGHTS



Go Locall

- Supporting diversification of products is a new avenue for employment generation.
- 2. Promoting cottage industries and localized initiatives



Participatory Solutions

- Empowering local people for governance and equip locals to utilise natural resources
- 2. Adopting community resource management instead of prevalent individualistic approach
- 3. Engaging community stakeholders in decision making and policy design

CRITICAL ACTIONS FOR THE FUTURE



Funding threat analysis-based research projects to integrate science in policy making for jhum



Monetary compensation for environmental services, under sustainable forest management



Using local practices and cultural symbols to invoke the importance of conserving natural resources













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Myanmar Regional Naturenomics™ Forum

Deforestation, livelihoods & potential of indigenous community-led forest governance & conservation



- Sein Win, Training Director, Myanmar Journalism Institute
- Ngwe Lwin, Country programme head for Fauna & Flora International Myanmar.
- U Win Myo Thu, Chairman ALARM & Senior Advisor,EcoDev
- Gaurav Gupta, Conservation Landscape Manager, Dawna Tenasserim Landscape
 - Graham Prescott, University of Bern, Switzerland

HIGHLIGHTS



Management Frameworks

- Establish synchronized forest management frameworks internationally
- Development of mechanisms for financial aid like ODA to strengthen policy development and implementation



Collective Action

- Negotiation with indigenous communities to foster a spirit of collective accountability
- Awareness campaigns for knowledge dissemination to ensure spread of relevant information among locals
- 3. Equipping NGOs and civil society organizations to provide support to local communities



Environmental Policies

- 1. Stronger assessment and use of high biodiversity value frameworks
- 2. Effective net zero NDCs focused on quality, not quantity
- Balance business & development interests with community & biodiversity interests & needs
- 4. Controlled formalization & regulation of gold mining

CRITICAL ACTIONS FOR THE FUTURE



Developing sustainable and practical policies that fit the contextual landscape of the country



Stronger, clearer land rights policies to promote community forestry



Integrated land use & infrastructure planning using a high biodiversity conservation value framework













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Nepal Regional Naturenomics™ Forum

Climate Change and Unsafe Migration



- Dr. Govind Prasad Thapa, Former Additional Inspector General of Nepal Police
- Kunal Majumder, India Correspondent of Committee to Protect Journalists
- Hasina Kharbhih, Impulse NGO Network
- Saurav Malhotra, Balipara Foundation

HIGHLIGHTS



Ecology and Economy

- Promotion of 'Green Jobs' to promote sustainable practices and economic growth
- 2. Over extractive needs of urban hot spots need to be contained
- 3. Studies show that humans improve biodiversity



Vulnerability Analysis

- Recognition of the impact of climate change especially in developing countries like Nepal urgent
- Economic deprivation, ecological imbalance and human trafficking are closely interlinked
- 3. Unsafe migration because of lack of opportunities at source



Community Leadership & Action

- Promotion of community skills and leadership by community organizations
- Involvement of indigenous youth as ambassadors and leaders for successful execution of interventions
- 3. Replication the learning of the conservation processes used in community owned lands

CRITICAL ACTIONS FOR THE FUTURE



Creating opportunities for locals to utilize indigenous resources instead of being forced to migrate



Agroforestry incentives can be disbursed till the forest is ready for harvestingcreating a balance



Facilitating the creation of opportunities for indigenous youth









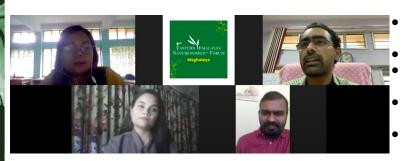




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Meghalaya Regional Naturenomics™ Forum

Floral Diversity in the West Garo Hills: Though the Ethnobotany Lens



- Swapnil Tembe, IAS, Deputy Commissioner & District Magistrate East, Garo Hills District
- Barnali Dutta, Balipara Foundation
- Binu Mathew, Rural Development and Agricultural Production. NEHU. Tura
- Prof. C. Perinba Suresh, Department of Horticulture, NEHU, Tura
- Naldarine Marak, Department of Forestry, Mizoram University

HIGHLIGHTS



Impact Analysis

- Funding research projects on alternative cultivation and prevention of top soil erosion due to existing practices.
- Find alternative livelihoods for locals involved in the rubber and areca nut plantations in the region as they are the primary source of deforestation and soil erosion.



Collaborative Paths

- World Bank to provide aid for community led landscape management
- 2. Community led decisions to preserve ecology and provisions for funds for the same
- Skill training and education to be provided to the indigenous community.



Economic Practices for Rural Development

- 1. Encouraging horticulture to increase rural incomes
- Promotion of lesser known medicinal plants as they in turn contribute to resilient ecosystem
- 3. Marketing of medicinal plants of development in the rural sector

CRITICAL ACTIONS FOR THE FUTURE



Ensuring access to affordable and high quality skill training and education



Promote & enhance local herbal products using traditional ecological knowledge



Conducting proper research so as to build a resilient, resourceful ecosystem













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Sikkim Regional Naturenomics™ Forum

Green energy posing potential threat of green depletion



Amit Patro, Sikkim Express

In Conversation with

- Dr Mahendra P Lama, Member of Niti Aayog, Professor at JNU
- Gyatso Lepcha, General Secretary of Affected Citizens of Teesta
- Mayalmith Lepcha, President of the Sikkim Indigenous Lepcha Tribal Association
- Himangka Kaushik, Research Analyst at TERI School of Advanced Studies

A conversation curated in partnership with the Ashoka Trust for Research in Ecology & Economy (ATREE)

HIGHLIGHTS

Changing Dynamics, Development & The Role of Policy

- The built approach of cultural ecology and technical aspects need to be incorporated with impacts of climate change.
- Remodeling of the industry of hydro-power to navigate through cohesion of various verticals of projects alongside socio-economic impacts on the indigenous communities
- 3. People need to accept and voice the need to support realistic means and ways of development

Multidimensional planning

- Incorporating cultural perspectives the Teesta acts as a cultural highlight and identity of the indigenous communities of Sikkim
- 2. High need to understand the carrying capacity of the river systems
- 3. The development of projects (e.g. mega hydropower dams) need planning and no planning would be a sign of a downtrodden country or state
- 4. Cohesion in planning critical to dismantling truncated planning & narrow visions

CRITICAL ACTIONS FOR THE FUTURE



Effective activism to positively impact communities and bring about a sense of ownership



Level up the aspects of advocacy for restoration and conservation



Build on the existing ecosystem services of the Himalayas













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Tripura Regional Naturenomics™ Forum

Restoring river ecosystems: Community Approach towards preserving ecological diversity



Biswendu Bhattacharjee

In Conversation with

1.

- Samrat Goswami, Assistant Professor at Dept of Rural Management & Development, Tripura University
- Selim Reza, Tripura Bamboo and Cane Development Centre
- Pawan Kaushik, Regional Director At Centre For Forest- Based Livelihoods & Extension, Tripura

HIGHLIGHTS



River pollution and restoration

- 1. The processes of river pollution and control should be multifaceted
- River conservation is a fundamental duty and must be taken into consideration as a major ecosystem service.
- 3. There is an urgent need for community based management for riverine systems.



Awareness programs and increase membership

- Systemize and incentivize actions to build on favorable behavior.
 - Build on partnerships with the local people for a better perspective on conservation methods.



Patterns of water usage

- Systemize the usage of water based on varied communities of Tripura to understand gradients and variables of pollution and pollutants in the marked out geography.
- 2. Ownership to be given to the local communities through various programs and intervention models to carry out activities and incentivize the same.

CRITICAL ACTIONS FOR THE FUTURE



Create buffer zones based on locality wise water lengths with regard to the water bodies and riverine systems in Tripura, particularly in upper catchment areas



Increase awareness programs in for rural & urban communities – to transfer the ownership of reducing levels of pollution in varied water bodies













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Nagaland Regional Naturenomics™ Forum

Community for conservation: A transition from community into hunting



Siddharth Edake, The Energy and Resources Institute (TERI)

In Conversation with

- Bano Haralu, Nagaland Wildlife and Biodiversity Conservation Trust
- Ivan Jimo, Tizu Valley Biodiversity Conservation and Livelihood Network
- Nuklu Phum, Sam Hegginboton University for Agriculture Technology and Science

HIGHLIGHTS

A Community Perspective to Conservation

- There needs to be a holistic approach that is looked into by those who benefit out of the ecosystem services to create a sense of balance.
- 2. Inclusion of elderly members to look into management of existing natural resources and identifying the importance of species.

Interdependency is key

Land owners and the civil society have played a major role to make the right intervention – people have realized that there is no compensation for conservation.

The inclusion of religion in propagation of conservation.

Microfinance for community conservation

 Use of fallow land and jhum land for alternate means of generating revenue

Workshops in the forest

To understand the importance of jhum alongside surveys to develop a mechanism to "shoot with cameras and binoculars" along with an incentive through rewards for spotting new species

CRITICAL ACTIONS FOR THE FUTURE



Revenue generation for biodiversity conservation



Sustainable development of connectivity & linkages to build the support infrastructure for alternative livelihoods such as ecotourism













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Arunachal Pradesh Regional Naturenomics™ Forum

Mindful Tourism Towards generating livelihoods opportunities



Shyamkanu Mahanta, Social Entrepreneur In Conversation with

- Oken Tayeng, Founder, Abor Country Travels & Expeditions
- Jambey Dondu, President of Environmental Protection Society, Tawang
- Koj Rinya, IFS,Member Secretary, Arunachal Pradesh State Pollution Control Board

HIGHLIGHTS



Mindful Tourism, Biodiversity and Policy

- Scientific backing and policies can have positive impacts on the regulatory and recreational services of the forest.
- Economic benefits and incentives gets affected by the on-ground communities.



Community based eco-tourism

- Role of the state government plays 1.

 a vital role in the upliftment of the local economy through eco-tourism
- 2. Research needs to be done to promote species that are specific to the region thus leading to ethnobotanical underpinnings



Need for outreach techniques

The need for outreach and marketing methods to increase flow of tourists who need to know of the local biodiversity – both medicinal plants, flowering plants and other types of species. This will become a method of employment generation.

CRITICAL ACTIONS FOR THE FUTURE



Collaborations and partnership alongside capacity enhancement



Trust building between organizations and confidence on the local economy to take forward continued traditional practices

Communities become the torch bearers of conservation through mindful tourism













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Mizoram Regional Naturenomics™ Forum

Community engagement & scientific approach to re-invent shifting/jhum cultivation



Kalpana Sarathy, TISS

In Conversation with

- Bhupesh Chaudhary, IAS, Addl. Secretary Communications Technology (ICT)
- John Zothanzama, Mizoram University & Mizoram Sustainable Development Foundation
- Jaydev Mandal, Madhab Choudhury College
- C. Lalengzama, Dept. of Social Work, Mizoram University

HIGHLIGHTS



Stronger Science, Better Data

- Existing policy is built on derivative claims from the 1970s not current, hard data
- 2. Current data suggests jhum cycles are 7-10 years & that this is enough for regeneration
- Solid science & data is needed to drive jhum policy for greater sustainability



Participatory Solutions

- Land privatization has led to greater landlessness - weakening incomes
- 2. Community stakeholders have to be involved across decision-making & policy design
- 3. Solutions have to be farmer friendly & build on existing traditions for greater adoption



Developing Shifting Cultivation

- Tried & tested technology and solutions, adapted for local context
- Systematize local markets, creating market access, effective transport links
- 3. Invest in developing sustainable practices (e.g. MISALT) in shifting cultivation

CRITICAL ACTIONS FOR THE FUTURE



Science & evidence-based conversations & policymaking for jhum



Incorporate local practices & knowledge in jhum development



Effective land management to minimize landlessness and maximize sustainability













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Bangladesh Regional Naturenomics™ Forum

Mangrove Ecosystem: Habitats, Communities & Livelihoods



Zabed Hossain, University of Dhaka

In Conversation with

- · Md. Jahidul Kabir, Forester
- Mohammad Firoj Jaman, University of Dhaka
- Md Niamul Naser, University of Dhaka
- Abdullah Harun Chowdhury, Khulna University
- Md Noor Alom Sheikh, Freelance journalist & environmental activist

HIGHLIGHTS



Risks & Challenges

- 1. Natural rising forest floor, top soil erosion, increasing salinity
- 2. People overharvesting of natural resources, deforestation, poisons in fishing
- 3. Industrial oil spills, developmental pressures, air pollution



Better Governance

- Streamlining & cross-department coordination inside & in peripheries of Sunderbans
- Ensure communication & management between departments
 - Strategic environment planning with provisions for alternate livelihoods



Transboundary Collaboration

- Dialogue & collaboration across watershed countries
- Cooperation with India for watershed management & release of freshwater
- 3. Cross-border forest governance for ecosystem integrity & health

CRITICAL ACTIONS FOR THE FUTURE



Endowment fund to sustainably support fringe & periphery communities



Community-based management measures & institutions



Culturally relevant alternative livelihoods that protect the Sunderbans









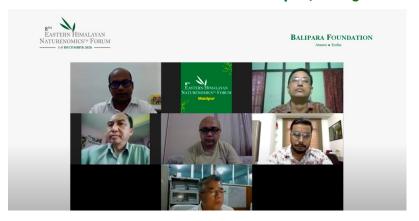




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Manipur Regional Naturenomics™ Forum

Lakes & Wetlands: the 'Lifeline of Manipur', losing life due to increasing human activities



Dhurbajyoti Sahariah, Guwahati University In Conversation with

- T Brajakumar, Directorate of Environment & Climate Change
- Mr Salam Rajesh, Manipur Wetland Authority
- · Abhinandan Saikia, TISS Guwahati

HIGHLIGHTS



Thinking in Ecosystems

- 1. Loktak lake is not a single water body but a cluster of wetlands
- Watershed management approach to allow ecosystem processes to flow smoothly
- 3. Multi-stakeholder governance drawing in global expertise



Traditional Ecological Knowledge

- Synchronize indigenous knowledge & TEK in wetlands policy, protection & management
- 2. Consultation with communities through bottom-up approaches including their knowledge
- 3. Understand trajectory of wetlands alongside communities



Building Adaptive Capacity

- Enhancement of awareness regarding wetlands importance & protection
- Low-carbon, low-impact infrastructure over big hydropower projects
- 3. Common platforms for sharing knowledge across groups & communities

CRITICAL ACTIONS FOR THE FUTURE



Scientific watershed management system



Monitor & control tourist capacity to minimize impacts on ecosystems



Work with local cultures & traditions e.g. developing jhum sustainably or living museums













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ABOUT THE EASTERN HIMALAYAN NATURENOMICS™ FORUM

The Eastern Himalayan NaturenomicsTM Forum is a global, interdisciplinary platform that brings together businesses, communities, the development sector, conservationists and academics to foster knowledge sharing, and generate grassroots actionable solutions to create Rural Futures across the Eastern Himalayas.

First instituted in 2013, the Forum has evolved and branched out into regional forums, the first of which was held in Sikkim in 2019, followed by a forum in Bhutan in early 2020. Leveraging the power of technology, the Forum has branched out across the capitals of Eastern Himalayan states & countries & will continue to do so in the coming year.

THE IMPACT



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