

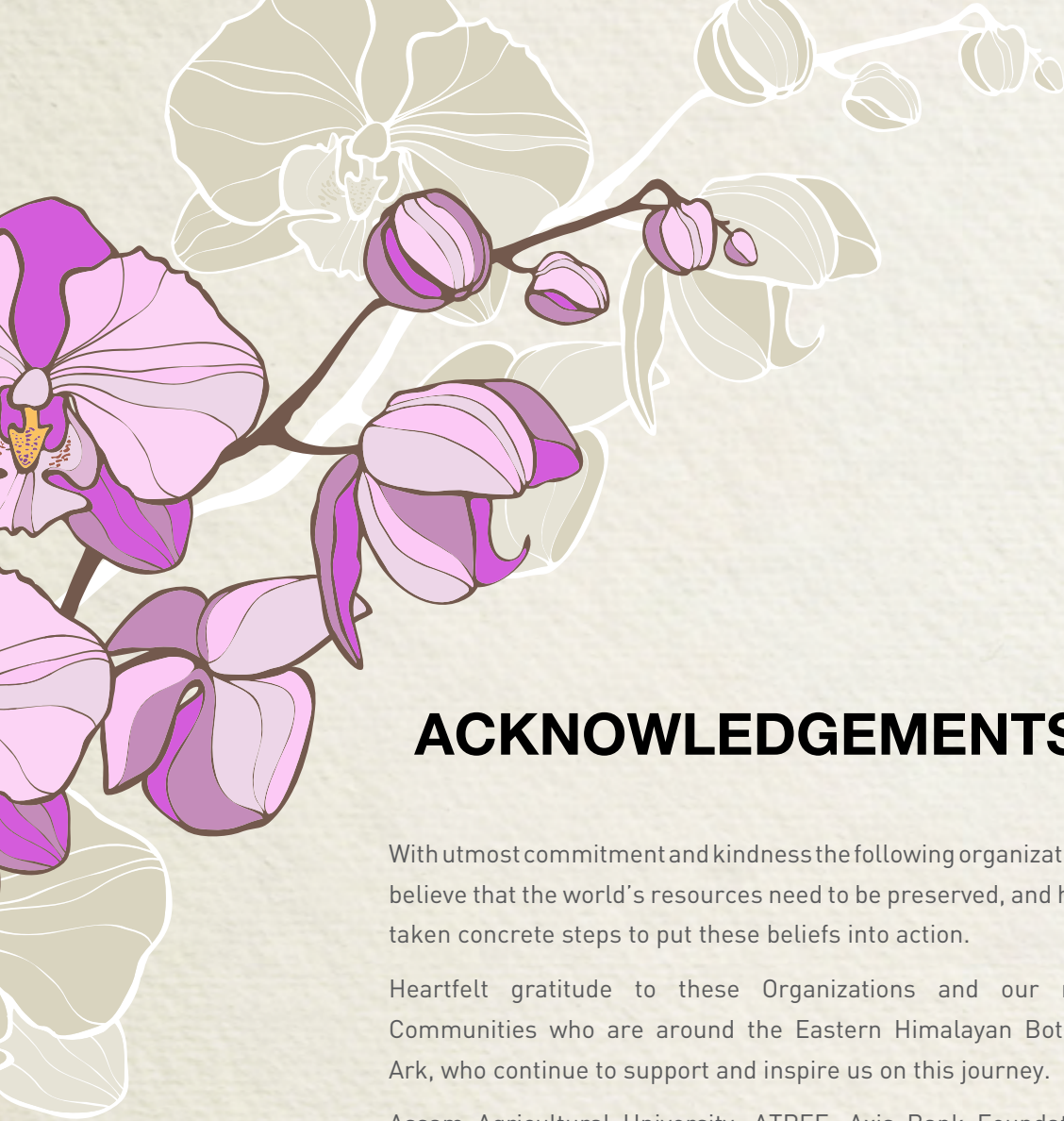
# BALIPARA FOUNDATION

Assam • India



PROGRESS & IMPACT REPORT 2016-17  
PLANS 2017-18





## ACKNOWLEDGEMENTS

With utmost commitment and kindness the following organizations believe that the world's resources need to be preserved, and have taken concrete steps to put these beliefs into action.

Heartfelt gratitude to these Organizations and our nine Communities who are around the Eastern Himalayan Botanic Ark, who continue to support and inspire us on this journey.

Assam Agricultural University, ATREE, Axis Bank Foundation, Cotton State University, Dainik Janambhumi, Environment and Forest Department of Assam, Meghalaya, Tripura & Nagaland, Gauhati University, Globally Managed Services India Private Limited, HDFC Housing, Hindustan Unilever Limited, IORA Resorts, Kunming Institute of Botany, Myanmar Matters, Network Travels, News Live Assam, North East Hills University, River Journeys and Bungalows of India, State Bank of India, Tata Motors Finance, Tata Trusts, Tata Global Beverages Limited, Sanctuary Asia, Tezpur University, Vivanta by Taj, Vodafone, United Spirits, Wildlife Conservation Trust, Wildlife Conservation Society, Wildlife Trust of India, World Wildlife Fund for Nature.

The nine Communities: Nyishi, Garo, Adivasi, Mishing, Bodo, Rajbanshi, Bengali, Assamese and Nepali Communities.

### **Registered Office**

### **Balipara Foundation**

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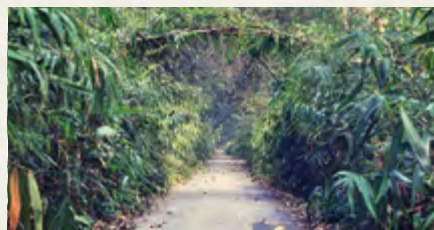
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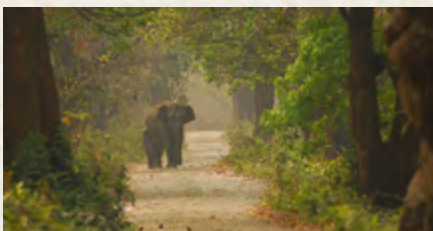
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Picture Credit : Saurav Malhotra



# EASTERN HIMALAYAS: RE-RURALIZATION THROUGH BOTANY

At the Eastern Himalayan Naturenomics™ Forum, the successor to the Asian Elephants in the Wild Conferences, we broadened the scope of the conversation through the theme for 2016 “Moving away from single species conservation to focus on the larger drivers of conservation”.

From the conversations at the forum we concluded that there is more to Botany than its strictest scientific definition “the scientific study of plants”, we’ve come to learn that its interdependent with the humans

and the fauna is integral for food and water security for the future. The beautiful kinship is clearly manifest in myriad ways, from lively flight of the bee to the way the various tribal communities live in harmony with their natural surroundings.

My personal exploration of the Eastern Himalayan Region’s botanical treasures has been complemented by the vivid descriptions of leading botanists like Frank Kingdon Ward & J. D. Hooker. An intrepid adventurer and celebrated botanist, Kingdon Ward has influenced much of my

understanding and philosophies of botany and its importance. His detailed writings were a constant companion of my personal experiences in the botanical paradises of the Eastern Himalayas.

Kingdon Ward inspired me to go further back in history to discover the works of J. D. Hooker. Hooker’s works like Flora of British India and Rhododendron of Sikkim-Himalaya extensively document the flora of North East as early as the mid-19th century.



Members from the Mishing Community gather to prepare rice beer as a part of their tradition





Picture Credit : Kosty



## Knowledge Bank

A few years ago, through Dr. Kamal Bawa, founder of ATREE, I was fortunate to meet a passionate botany adventurer named *Naresh Swami* whose publications have captured some of the most splendid flora of the Eastern Himalayas in his book *Terrestrial Orchids* and more recently through the publication *Hidden Treasures: Rare Plants of the Alpine Himalayas* supported by Balipara Foundation and ATREE. These publications made me realize just how pivotal a role these natural assets have played, and

continue to play in the cultural well-being of generations. This evokes in us the passion to preserve this natural wealth so we can continue to enjoy it.

Apart from the written word it is these rich landscapes that have been the inspiration and the teachers for Balipara Foundation in learning from

the way these ecosystems thrive. Just like nature we are learning to constantly change and adapt to our surroundings and create harmonious models of community conservation.

## Keeping our Promises

2016 was an exciting year and 2017 will seek to accelerate the pace at which we are even building on our learnings. Here are some of the highlights from 2016:

	Programs Undertaken 2016	Progress in 2016	Rating Our Effort
Habitat & Wildlife Conservation	Indo Bhutan Landscape	The Khalingduar Joint Forest Management Project launched under the Udalguri Landscape Mission and funded up to Rs. 72,00,000	7/10
	Kaziranga Karbi Anglong Landscape	Continuing study of the Wildlife Occupancy Modelling and the Asian Elephant Radio-collaring in Kaziranga	3/10
	Botanical & Conservation Center	The Eastern Himalayan Botanic Ark Launched in October 2016 as a centre for scientific study and education about the Eastern Himalayan flora and fauna.	6/10
Conservation Enterprise	Potable Water	The 24x7 Water Project has been conceptualised after extensive field study. This program will be launched in 2017	2/10
	Waste Management	A prototype waste management plant installed at the Eastern Himalayan Botanic Ark	2/10
	Renewable Energy	No new progress in 2016	0/10
Knowledge Delivery	Scholarships & Internship	Balipara Foundation team welcomed qualified Naturenomics™ Trainees to the Eastern Himalayan Botanic Ark, Udalguri, Guwahati and Mumbai teams	4/10
	Skill Development	3 team members from the Eastern Himalayan Botanic Ark team visited Kunming Institute of Botany for a training and skill building program	8/10
	Naturenomics™ Publication	In 2016 Balipara Foundation published the: <ul style="list-style-type: none"> <li>Naturenomics™ Compilation for the Eastern Himalayan Naturenomics™ Forum 2016</li> <li>Naturenomics™ 6.0 – A compilation of case studies of Balipara Foundation Award Winners (2013 – 2015)</li> <li>Supported the publication and launch of <i>Hidden Treasures: Rare Plants of the Alpine Himalaya</i> by Naresh Swami</li> <li>Published a number of thought leadership articles through the website and other media</li> </ul>	7/10
	Conservation Events	The Asian Elephants in the Wild and the Balipara Foundation Awards were combined and rechristened as the Eastern Himalayan Naturenomics™ Forum	8/10





While we have achieved some of the goals for 2016, we were unable to meet all of them. This is to be expected in an organization that is constantly evolving. However, besides the targets we set for ourselves last year we are proud to have launched many more.

## Elephant Country

2016 saw the launch of Elephant Country, a solid global brand backing projects working to preserve and re-wild Asian Elephants, their habitats and migration corridors.

In October 2016, we began execution of the Khalingduar Joint Forest Management Program (Khalingduar JFMP) under Elephant Country - Udalguri Landscape Mission. This project is an embodiment of our desire to promote conservation through building natural assets which not only extend the green cover in the region but also generate sustainable livelihoods for the locals who will themselves afforest the region with Balipara Foundation Team providing the expertise. This JFMP is one part of a holistic community conservation model through which we are looking to empower the community by building a combination of human, natural and infrastructural assets. I am pleased that the execution of the Khalingduar JFMP has commenced with the formation of the Eco Development community and first two phases of this project with a budget of Rs. 90,00,000 have been fully funded.

Over 2017-18 as the Khalingduar JFMP gains momentum we will begin to prototype and plan the building of social mobility assets and also continue growing the capacity of the grassroots leadership through the Eco-Development Committee.

Along with this we have also commenced work on setting up an Elephant Country - Elephant Insurance for the people of this region. This initiative seeks to reduce the immediate impact of damages caused by human elephant conflict in this region through gap funding government compensation in the event of damage or loss of life. 2017 will see this program being completely available to the people living in the Balipara and Udalguri regions of Assam.

At the Eastern Himalayan Naturenomics™ Forum 2016 we also announced the launch of a unique virtual platform, Elephant Country - Asian Elephant Secretariat. Inspired by the boundary-less existence of Elephants it a virtual platform which allows global stakeholders to work collaboratively on Asian Elephant Conservation. The platform currently provides the members with an opportunity to converse, collaborate and share data and a toll-free Helpline number with many more features in the works. Over the next year, we will build our network of partners and enhancing the technology of the platform to serve as a powerful tool for global collaborators and the

largest source of verified information on Asian Elephants and to amplify our individual efforts.

Over the next year, we will work with our partners to create a series of Elephant Country branded products and services. This will include Elephant Country Tea and a suite of other products which will serve as revenue generators for all Elephant Country projects.

## Eastern Himalayan Botanic Ark

The objective of the Eastern Himalayan Botanic Ark is to become a centre for studying and showcasing the biodiversity of the Eastern Himalayas. In 2016, our first advisory board meeting led by global botanists Peter Raven (Missouri Botanical Gardens), Dr. Kamal Bawa (University of Massachusetts, Boston) and Prof. Xu Jianchu (Kunming Institute of Botany) gave shape to the vision of the Botanic Ark as a haven for studying Eastern Himalayan biodiversity.

Visitors can now experience a wide variety of flora and fauna endemic to the region while traversing quietly through the botanic trail as our trail guides explain to them the significant role these pieces of the biological mosaic play in the well-being of our ecosystem. At the end of the trail they can experience the local culture through cuisine and handicrafts through the Naturenomics™ Bazaar where they can purchase hand dyed and woven handlooms from the





region and sample the delicious local cuisine at Beehive (Bhelaghor) and continue their experience at the Botanic Ark at Wild Mahseer the Heritage homestay which provides the residences at the Ark. In the coming months, we will continue building up the herbarium and the seed bank while creating themed glasshouses housing an orchidarium, a fern house and a showcase of the variety of the flora found at the various levels of the Eastern Himalayas. We will also invite artists and birdwatchers to come and capture the vistas of the Ark with an increasing number of local products available through the Naturenomics™ Bazaar.

This has also led to the launch of the Naturenomics™ School to inspire a new generation of Naturenomics™ practitioners, who will be the stewards of these mighty forests. Here students will have the privilege of learning through the endemic knowledge of local botanists and grassroots experts, who have learned their skills through years of hard work and knowledge passed down through generations. From 2017, we will be offering a variety of interactive programs for education through nature.

Housed at the Botanic Ark is also the Eastern Himalayan Nursery which seeks to be a destination for sourcing the highest quality endemic species of saplings as well as seeds and the tools required to nurture them. This will be a place where visitors can take back

a living reminder of their experience at the Eastern Himalayan Botanic Ark. Over the next year, we will look to increase the sampling of endemic species available at the Nursery and seek to tie up with local governments and communities to encourage the planting of hardy endemic species which can thrive in the local climates.



Structure of the Eastern Himalayan Botanic Ark





## Eastern Himalayan Naturenomics™ Forum

This year, through the launch of the Eastern Himalayan Naturenomics™ Forum we built on our experiences with hosting the Asian Elephants in the Wild and Balipara Foundation Awards to expand the conversation and the impact. This reinvention led to an increase in the number of stakeholders in the conversation and we were able to work with our knowledge partners to highlight a variety of perspectives on different issues ranging from Asian Elephant Habitats to Technology and Environmental Law. Illustrious speakers like John Roberts, Khyne U Mar, Bruce Rich, Rajeev Goyal, Dr. Prabhakar Rajagopalan brought different ideas to spark conversations and ideas within the participants. The Forum also saw the launch of two new initiatives, Elephant Country – Asian Elephant Secretariat by Balipara Foundation and Elephant Friendly™ A certification standard being developed by Lisa Mills and Wildlife Friendly Organization.

The Eastern Himalayan Naturenomics™ Forum 2017 will seek to expand this conversation with new plenaries and an even larger pool of stakeholders. We also hope to reframe our format

to deepen the involvement of our knowledge partners.

The Balipara Foundation Awards featured a powerful jugalbandi between leading technologist Shri S. Ramadorai and Shri Pt. Harisprasad Chaurasia on the bamboo flute accompanied by the melodious vocals of Shrimati Mala Ramadorai to demonstrate the confluence of Nature, Music & Technology. This was accompanied by rewarding 12 ecological crusaders across 10 categories and highlighting their seminal work in the preservation of the ecological heritage of the Eastern Himalayas.

## Publications

In the last year, we released 2 publications at the Eastern Himalayan Naturenomics™ Forum, *Naturenomics™ Compilation*, a collection of articles written by the Balipara Foundation Team and partners based on the plenaries for the forum, and *Naturenomics™ 6.0 a compilation of case studies* of all the Balipara Foundation Award Winners from 2013 to 2016. These publications helped us highlight the achievements of our teams as well as those of our knowledge partners and the case studies showcase the work done by our tireless eco-crusaders.

We are also partnering with Current Conservation, an online and print magazine which adopts a unique perspective on conservation issues and combines vibrant illustrations with unique storytelling through a series of articles focused on introducing students and a non-technical audience to the importance of conservation.

Come 2017 we will adopt a renewed focus on supporting other such important publications which support our efforts in conservation of the Eastern Himalayas.

This year we seek your help in casting a wider net and rewarding more such deserving crusaders who do so much to protect our natural heritage.

This Progress and Impact Report will showcase the efforts put in by the Balipara Foundation teams on all these initiatives and our promises for the coming year as we work with our partners to create social, economic and ecological impact at a large scale by combining traditional and modern knowledge.

## Looking Ahead

In 2017 we hope to not only to deepen the impact of our ongoing projects but also focus on constantly innovating through new initiatives. Through the Eastern Himalayan Naturenomics™ Forum we will look forward to continue building on the conversations we have been having over the past few years and constantly seek to bring in new voices to infuse new ideas into our collective goals while creating new opportunities for collaboration.

While we may not have achieved all the goals we set for ourselves at the beginning of 2016, we have exceeded our goals on some of the key new projects we have begun. Over the next few years our budgets will increase radically as we look to achieve moonshots and deepen our impact on the Eastern Himalayan communities. To support the work taking shape on ground we are also looking to build a corpus of Rs. 5 crore. We look forward to your support through participation, partnerships and long term investments amounting to a much greater cumulative impact on the communities of the Eastern Himalayas than ever before. Your continued support, expertise and contributions will energize our learnings from the forests and be inspired by the Eastern Himalayas.

– Ranjit Barthakur, Founder Trustee



# BALIPARA FOUNDATION OVERVIEW

Since 2007, Balipara Foundation has initiated experiments in ecological protection and restoration of the Eastern Himalayan Region through the concept of Naturenomics™. The journey to execute our vision of Conserving and Preserving the Natural Heritage of the Eastern Himalayas has evolved through a series of innovative project prototypes for conservation through interdependence.

Structured as a 'Community Conservation Incubator' our mission is to develop symbiotic models for Community Conservation through technology.

All our project prototypes are designed with clear exit strategies and we also integrate revenue generation models

to make the projects self-sustaining, building each project with a robust grassroots empowerment plan to allow the communities to successfully take over and manage the project over the long term.

Our objective is to facilitate co-existence through interdependence and optimization of natural assets using Naturenomics™. Through Naturenomics™ we seek to emphasise the interdependence between humans and their ecosystems by creating

ecologically compliant community assets.

Through this we can catalyse social mobility by supporting sustainable economic and ecological development through extensive learning initiatives and by unlocking the Nature Capital in food, water, energy, and biodiversity while giving the communities the stewardship of these assets.

## Our major areas of focus are:

### COMMUNITY CONSERVATION



Improving Corridor Connectivity  
Man-Animal Conflict Mitigation  
Creating Social Mobility

Elephant Country-Udalguri Landscape Mission  
Naturenomics™ Conservacies  
Seeds & Root Nursery  
Elephant Country - Elephant Insurance  
Eastern Himalyan Botanic Ark-Wild Mahseer

### APPLICATIONS RESEARCH, KNOWLEDGE ACCUMULATION AND DISTRIBUTION



Biodiversity Conservation  
Education & Outreach  
Experimenting with Technology

Naturenomics™ School  
Elephant Country Products  
Nature Walks & Trails  
Naturenomics™ Bazaar  
Balipara Foundation Awards  
Biological Audit  
Ecological Champions Case Studies

### KNOWLEDGE PUBLICATIONS & COMMUNICATIONS



Digital Platforms for Collaboration  
Investing Risk Capital  
Research & Case Studies Publication

Eastern Himalyan Naturenomics™ Forum  
Elephant Country-Asian Elephant Secretariat  
Sponsored Publications  
Naturenomics™ Publications & Articles  
Progress & Impact Report

At Balipara Foundation, we don't aspire to "save forests", instead we seek to learn from them. We envisage a future where conservation is a part of the human fabric and technological innovation reinforces the principles of Naturenomics™ in human development. The biodiversity-rich Eastern Himalayan Region serve as our inspiration and provides a backdrop to energize innovation in conservation efforts which will inspire conservationists globally.





# IMPACTS 2016- 17

Verticals	Impact
<b>Elephant Country</b>	<b>Social</b> Bringing together people & communities under a formal Organizational Framework for measurable impacts Creating organizational partnerships for NGOs and Forest Department for financial and technical assistance Experimenting with Technology to design unique models of conservation
	<b>Economic</b> Direct income opportunities for the 12 participating villages over the 6 year Project Period Generation of 30520 'man-days' of employment @ Rs. 250 per day to benefit Bodoland communities Timber & Bamboo revenues to yield INR 2166 lakhs over 30 years for the participating communities Access to a multitude of Non Timber Forest Products, ranging from fruits, tubers, wild foods & local medicine Knowledge Partners can generate financial & resource support through the Asian Elephant Secretariat Efficient utilization of global resources on Asian Elephant habitats conservation through Asian Elephant Secretariat
	<b>Environmental</b> 9.9 lakh trees being planted over 500 hectares of non-forest. Reserve Forest functional area increased by 8% 30240 MT of Carbon sequestered over 30 years Decreased dependence of communities on Timber & Non Timber Forest Products Increased canopy cover and reduced soil erosion
	<b>Future Plans</b> Make Elephant Country a unique global brand encompassing all countries where Asian Elephants roam wild, to promote the conservation of Asian Elephants 1.5 lakh saplings will be planted through the Khalingduar Joint Forest Management Project as part of the Elephant Country: Udalguri Landscape Mission Through the Elephant Country: Udalguri Landscape Mission, prototype holistic community conservation and welfare models to replicate along the entire Indo-Bhutan border (approx. 700 kms) Use technology to supplement and support on ground efforts for Human Elephant Conflict Management, Community Social Assets, etc. Through prototyping and community participation design benefit sharing models for community Afforestation/Reforestation Facilitate the development of grassroots NGOs to manage the continuation of efforts on the ground Expand the Elephant Insurance program to encompass the Eastern Himalayas and beyond Co-design the Asian Elephant Secretariat to become the platform for verified information exchange on Asian Elephants globally Create a line of Elephant Country Products and Services to generate revenue for all Elephant Country Products. First in this line of products will be Elephant Country Tea





# IMPACTS 2016- 17

Verticals	Impact
Eastern Himalayan Botanic Ark	<b>Social</b> Helping local communities become stewards of their natural assets through education Creating a record of indigenous knowledge of botany through the Ethnobotany Project Creating social awareness about sustainable plant utilization through education Impact education by linking the learning with life Awareness drives about living with snakes through community education camps Inspiring a new generation of environmental stewards through the Naturenomics™ School 1 Day, 1 week, 10 Days and 10 week courses
	<b>Economic</b> Promoting local handicrafts and cuisines through the Naturenomics™ Bazaar Creating opportunities for showcasing and selling the local ethnobotanic heritage through the Lokra Bazaar An opportunity for local communities to showcase and promote their local cuisine through Beehive (Bhelaghor) the ethnic restaurant at the Eastern Himalayan Botanic Ark
	<b>Environmental</b> 22 acres of mostly barren land converted into a green haven of Eastern Himalayan flora and fauna The Eastern Himalayan Botanic Ark is a safe haven for the Flora of the Eastern Himalayas The Herbarium and seed bank seek to create a repository of local flora and seeds Experimental prototyping has led to a scientific model for the forest regeneration effort in Elephant Country - Udalguri landscape Mission Biological Inventories of Eastern Himalayas launched to document the flora and fauna of the Eastern Himalayas, in partnership with ATREE
	<b>Future Plans</b> Build the Eastern Himalayan Botanic Ark to become a globally recognized safe haven for the conservation and study of Eastern Himalayan flora Create a world class Seed Bank & Herbarium to serve as an archive for study and preservation of Eastern Himalayan flora Encourage learning with nature through the principles of Naturenomics™ at the Eastern Himalayan Naturenomics™ School The Eastern Himalayan Nursery will promote the propagation and study of the endemic flora of the Eastern Himalayas The Biological Inventories will study and document the flora and fauna of the Eastern Himalayas in partnership with multiple organizations across the region The Eastern Himalayan Naturenomics™ School and the Eastern Himalayan Nursery will serve as global centres of excellence and learning through the combinations of Nature & Economics





# IMPACTS 2016- 17

Verticals	Impact
<b>Eastern Himalayan Naturenomics™ Forum</b>	<b>Social</b> A multidisciplinary dialogue between participants from 13 countries Community Conservation Efforts launched across Tea Gardens in 2014, in partnership with APPL Tea Company, WCS, ANCF, CWS and Balipara Foundation Occupancy Modeling in the Kaziranga – Karbi Anglong being conducted in partnership with WTI Balipara Foundation Award Winners creating impact through unique education models Balipara Foundation Awardees have published 17+ books, 500+ scientific articles
	<b>Economic</b> Virtual Asian Elephant Secretariat conceptualised for sharing economic and human resources for Asian Elephant conservation Balipara Foundation winners have created numerous opportunities for sustainable livelihoods, skill development programs and successful eco-tourism models
	<b>Environmental</b> Cumulatively over 1500+ ha of forest saved, 15+ National Parks established by Balipara Foundation Award Winners Elephant Radio Collaring on the Indo Bhutan Border launched with the Government of Bhutan, in 2014 Indo-Bhutan Landscape Conservation Program launched in 2015, in partnership with State University of North Carolina, Udalguri District Administration & the local forest department North East Corridor Program launched in 2015 with WTI and Govt. of Assam Asian Elephant Research Center announced at with Eastern Himalayan Naturenomics™ Forum 2016 at Assam Veterinary College
	<b>Future Plans</b> The Forum will continue to grow and serve as a multi-disciplinary platform to drive continuous collaboration and action across industries to promote unique models of conservation The forum will expand the conversation with grassroots stakeholders through the institution of Regional Naturenomics™ Forums to seek deeper representation of communities, governments, businesses and NGOs The Eastern Himalayan Awards will continue to find the hidden gems in the world of conservation, highlight their stories and encourage their success in the Eastern Himalayas
<b>Naturenomics™ Publications</b>	Published Balipara Foundation 2016 Progress & Impact Report Published Naturenomics 6.0- “Naturenomics™ Compilation” Article Booklet Supported in publishing “Hidden Treasures: Rare Plants of the Alpine Himalaya” authored by Swami Naresh Newsletter 2016
	<b>Future Plans</b> To publish more volumes of the Naturenomics™ publications and highlight thought leadership and promote the interdependence between Nature & Economics To promote the work of botanic adventurers who are passionate about documenting the flora and fauna of the Eastern Himalayas To constantly publish thought leadership articles and position papers to encourage dialogue and introduce new perspectives in conservation To encourage publications which help to promote conservation through unique means such as art, illustration and storytelling



# IMPACTS 2016- 17

Verticals	Impact
<b>Digital/ Social Media</b>	<b>Balipara Foundation</b> Page Views: 39,435 Mins / Session: 04:09 Bounce Rate: 55.46 % Articles Added: 598
	<b>Elephant Country</b> Page Views: 18,315 Mins / Session: 20:58 Bounce Rate: 25.22 % Articles Added: 2,679
	<b>Total followers</b> Twitter - 2125, Facebook - 10760, Instagram - 171
	<b>Social Media Insights during EHNF</b> Twitter - 13.5k against an annual average of 5K Facebook - 45K against an annual average of 11K Website - 19K against an annual average of 4K
	<b>Future Plans</b> To be the catalysts for innovation and change by publicizing the work of innovators and thought leaders globally To leverage the Balipara Foundation brand to highlight the achievements of Eco Champions on the ground and create content which is unique and thought provoking



Elephants in Udalguri District; Picture Credit: Anshuma Basumatry



# PLANS 2017-18

Project	Plans 2017-18
<b>Ex-Situ conservation, Nature Trails &amp; Walks</b>	1. Conducting Nature Walks and Trails for visitors. Visitors can be:
	a. Guests at Wild Mahseer
	b. Walk-ins from outside the campus
	c. Students at the Naturenomics™ School
	2. Nature Walks and Tours must be an engaging and interactive opportunity for participants to learn about the importance of conservation through examples, anecdotes and application
	3. Ex-Situ conservation will remain an integral part of the Eastern Himalayan Botanic Ark through the study and documentation of the various species present within the Ark and in the surrounding region
	4. The Ark should seek to become a comprehensive source of knowledge on the endemic species of the Eastern Himalayas
	5. The Herbarium, Seed Bank and other thematic sections will be expanded to include more and diverse species with a view to building world class herbarium, seed bank and glasshouses.
<b>Eastern Himalayan Nursery</b>	6. Attention will be paid to enhancing the technical capabilities of the team managing the Botanic Ark
	1. The nursery will source high quality seeds and sapling for developing robust populations of endemic species
	2. The Nursery will offer different types of plants: Endemic, Food bearing, Fruit bearing, Ornamental and Economically important
	3. The target audiences for the nursery are: visitors to the Eastern Himalayan Botanic Ark and Wild Mahseer, Forest Departments, the Army, local villagers, etc.
	4. The plants will be sold individually but also be in packages, eg. Forest Package, Kitchen Garden Package, the Ornamental Package, etc.
	5. Apart from saplings of different ages the nursery will also sell seeds, individually and in packages
	6. The Nursery will also offer services such as landscaping as well as gardening workshops and equipment for purchase

Project	Plans 2017-18
<b>Eastern Himalayan Naturenomics™ School</b>	1. A series of courses ranging from 1 day to 5 days, to 4 weeks and 8 week courses
	2. The target audiences for the various courses will include
	a. Children, below 5 yrs, 5-12 yrs, 12 – 18 yrs,
	b. Adults 18+ yrs
	c. Business leaders
	d. Government officials
	e. IAS, IFS candidates and officers
	3. The Courses offered will include
	a. Nature play based learning for children
	b. Yoga
	c. Buddhist teachings
	d. Vaastu
	e. Gardening & Agriculture techniques
	f. Agroforestry
	4. The faculty will include
	a. Indigenous experts
	b. Regional scholars
	c. National & International Experts
	d. Guest lecturers
	5. Students who attend the courses will receive certificates from the Eastern Himalayan Botanic Ark
	6. The Naturenomics™ School will generate revenue through the fees charged for the courses being offered
	7. Explore opportunities for collaboration with global universities to offer fellowships and internships to students studying a variety of scientific and non-scientific disciplines.
	8. The school will also seek to build Fellowship and Scholarship funds for offering opportunities to deserving and economically challenged students
<b>Biological Inventories of the Eastern Himalayas</b>	1. Catalogue biodiversity, including flowering plants, insects, fungi, lichens and microorganisms, agrobiodiversity and develop a comprehensive database using tools and approaches of biodiversity informatics. Curated data will be made available on the portals-the India Biodiversity Portal, the Bhutan Biodiversity Portal, and the Nepal Biodiversity Portal- open-access platforms that encourage participation from the professionals as well as the citizen scientists. Databases will also include Indigenous Local Knowledge on biodiversity.



Project	Plans 2017-18
	<p>2. Identify patterns of species richness, rare and endangered species, and monitor current pressures on biodiversity, including the impact of climate change, trade in wild species, and patterns of resource use; integrate these data into databases outlined above for the use of researchers, students and policy makers.</p> <p>3. Develop strategic plans for sustainable use, monitoring and management of India, Bhutan, and Nepal's unique biodiversity.</p> <p>4. Enhance human and technical resources of partners, the state of Sikkim, and other north eastern states, the country of Bhutan, and the eastern region of Nepal, in research, policy analyses, and education related to biodiversity science.</p> <p>5. Identify, based on findings, key opportunities for action, such as creating new biodiversity corridors, community conservation areas, and wilderness reserves and establish new centres for science education institutions for youth to study taxonomy, climate adaptation, and other regionally relevant topics.</p>
<b>Wild Mahseer</b>	<p>1. Create a unique eco-tourism model which allows visitors to experience the true wealth of the Eastern Himalayas</p> <p>2. Wild Mahseer to become a prototype for eco tourism and conservation by creating alternate economies for the communities residing in the region</p> <p>3. Promotion of alternate livelihoods through the promotion of interdependence between environment and human aspirations</p> <p>4. Skill building and promotion of local arts, artists, practices and knowledge through the Eastern Himalayan Naturenomics™ School</p> <p>5. Focusing on breaking even by 2020 to scale up the impact and attract attention to the region through a premiere hospitality experience</p> <p>6. Promotion of local culture cuisine and knowledge through learning opportunities at the Eastern Himalayan Naturenomics™ School for global travellers</p>

Project	Plans 2017-18
<b>Elephant Country: Udalguri Landscape Mission</b>	<p>1. Facilitate Conservation Action to restore the Transboundary ecosystems, improve wildlife corridor connectivity and green cover restoration.</p> <p>2. Plant over 1.5 lakh trees at the Community afforestation site in Udalguri</p> <p>3. Successfully prototype a holistic community conservation model which can be replicated in other regions.</p> <p>4. Use community centered approach to mitigate human-elephant conflict.</p> <p>5. Engage local communities, build resilience and enhance capacities for active participation in conservation efforts.</p> <p>6. Build capacity at the grassroots in sustainability science through skill development and alternative livelihoods to address critical environmental challenges in Eastern Himalayan sustainability.</p> <p>7. Create knowledge networks consisting of non-government organizations, academic Institutions, private sector, and government institutions.</p>
<b>Elephant Country: Asian Elephant Secretariat</b>	<p>1. Build global membership for the Asian Elephant Secretariat</p> <p>2. Find technology partners to help scale up the website and restructure to make it user friendly</p>
<b>Elephant Country Products</b>	<p>1. Launch Elephant Country Tea</p> <p>2. Explore and launch a series of Elephant Country products</p> <p>3. Partner with Elephant Friendly™ to promote Elephant Friendly products globally</p>
<b>Eastern Himalayan Naturenomics™ Forum</b>	<p>1. Theme: Community Conservation &amp; Botany</p> <p>2. To be held on 2nd &amp; 3rd November, 2017 in Guwahati, Assam, India</p> <p>3. Increase the number of stakeholders participating to bring in more perspectives for the conversation</p> <p>4. Balipara Foundation Awards to be given across 10 categories to eco champions of the Eastern Himalayas.</p>
<b>Naturenomics™ Publications</b>	<p>1. Update the Naturenomics™ Publications</p> <p>2. Publish new Naturenomics™ case studies</p> <p>3. Promote sponsored publications like Current Conservation and other authors like Naresh Swami</p>





## Assimilating the value of Naturenomics™ & its verticals









## ***Eastern Himalayan Botanic Ark***

***Nothing for Nature lives for itself.***

***Rivers don't drink their own water.***

***Trees don't eat their own fruit.***

***Sun doesn't give heat for itself.***

***Flowers don't spread fragrance for themselves.***



Tengamora (Java Jute)



Common Bluebottle



Bamboo Culms

At the Eastern Himalayan Botanic Ark we are creating a Museum of Botany and Natural History of the Eastern Himalayas by preserving and conserving our natural resources and building botanic knowledge banks through community-based conservation for our future generations.

The Eastern Himalayan Botanic Ark is the first of its kind in the Eastern Himalayas, an ex-situ conservation site that aims to promote native flora and fauna for conservation. Conservation of critically endangered, endemic and economically important plant species is necessary when the world is facing threat of losing its biodiversity to climate change. Botanic Ark plays a very vital role in ex-situ conservation as a centre for rescue, recovery, rehabilitation, exploration, documentation and germplasm preservation of plant species.

The Eastern Himalayan Botanic Ark started as an experiment in 2008 through plantation of 15 species of plants that included creepers & climbers, orchids, herbs, ferns, grasses and a few tree saplings into a small parking lot to allow nature to

grow and restore itself. The plot has now flourished into a dense forest with over 75 species of Birds, 72 species of Butterflies, 150 varieties of orchids, and a diverse spiders and insect's population that reinstates our faith in nature. Inaugurated on November 11, 2016 by Prof. Peter H. Raven, Missouri Botanical Garden, Dr. Kamal Bawa, University of Massachusetts Boston, and Prof. Xu Jianchu, Kunming Institute of Botany, the Botanic Ark seeks to become the centre for preservation and restoration of the biodiversity in the Eastern Himalayas through education, experimentation and research.

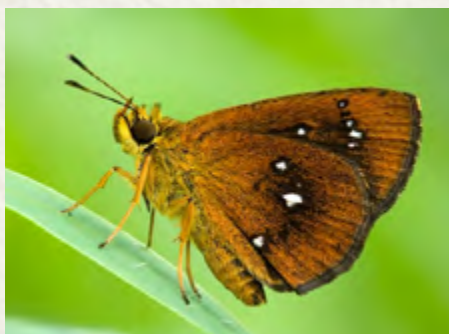
The Ark can be explored through Botanic Trails to view its varied species of butterflies, birds, orchids and plants; a Rural Nursery for collection and conservation of wild, ornamental, medicinal, crop related species, seed bank, 20 types of rice that are critical to ensure food security and conservation of wild plant species for the ecosystem; nature inspired heritage living at Wild Mahseer for visitors to experience mindful tourism; nature based experiential learning courses through the Naturenomics™

School; a knowledge repository of the bio-cultural diversity of the Eastern Himalayas through Ethnobotany study, and promotion of local handcrafted natural products from the Eastern Himalayas through the Naturenomics™ Bazaar.

The purpose of the Rural Nursery at the Ark is to explore rare, threatened and endemic species from the state of Assam and through research and action create social, environmental and economic impact in the Eastern Himalayas. The initiative will lead to involving common people in the field of conservation, creating awareness on different aspects of sustainable plant utilization, ensuring Biodiversity Conservation and also providing livelihood and revenue through saplings and seed selling.

Named after one of the toughest game fish in the world, Wild Mahseer situated in the biodiverse haven of the Eastern Himalayan Ark offers visitors a unique heritage stay and experience mindful tourism. Visitors can soak in the lush green tea plantations while enjoying a cup of Elephant Country Tea amidst beautiful sights and sounds

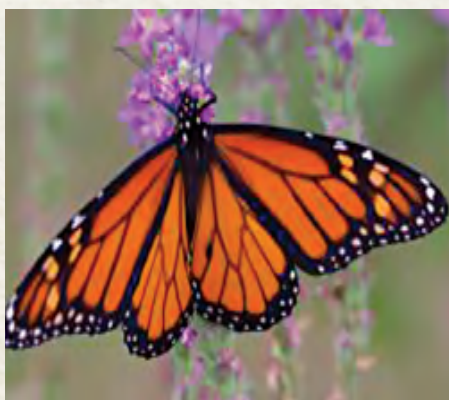




Chestnut Bob

of nature. Local Communities such as the Nyishi, Garo, Adivasi, Mishing, Bodo, Rajbanshi, Bengali, Assamese and Nepali contribute to enriching the cultural experience through food, art and history at the Ark.

Naturenomics™ School promotes the study of Botany and its related fields. The course teaches one to critically assess the importance and role of Botany in conservation, its impact on our natural resources and the role each species plays in balancing the ecosystem. This unique learning experience offers courses for a variety of audiences, from children aged 5 to adults, professionals and even plans to



Monarch Butterfly



Oriental Pied Hornbill, Dhonesh

introduce corporate training courses. These courses allow students the opportunity not just to learn about the latest advances in science but to learn from the local communities who have had the benefit of learning through wealth of knowledge earned through experience over generations.

Through the Ethnobotany Centre we have undertaken to study and archive botanic knowledge of nearby forest fringe communities, settled at the foothills of Sonitpur. It is here that we learn about the miracles of nature, its importance, usage and true meaning in the day to day life of people who live with nature and are the Guardians of Creation.

The Naturenomics™ Bazaar, hosts



Dendrobium Fimbriatum

WUYA and Saneki two local businesses which encourage local artists and artisans to create handcrafted products which are available for purchase on site. WUYA also offers workshops in weaving and organic dyeing for visitors to participate in.

Our journey at the Eastern Himalayan Botanic Ark has taught us that nature is the best architect and has the ability to look after those who look after it. This biodiversity has been tended to with care over the years and allowed to flourish through the passion and knowledge of the local botanists.



Common Mime



Great Indian Hornbill

#### Partners:

1. Kunming Institute of Botany
2. Missouri Botanical Garden
3. Gunter Pauli
4. Tezpur University
5. NEHU

The Eastern Himalayan Botanic Ark is the first of its kind in the Eastern Himalayas, an ex-situ conservation site that aims to promote native flora and fauna for conservation.



# BIODIVERSITY AT THE EASTERN HIMALAYAN BOTANIC ARK

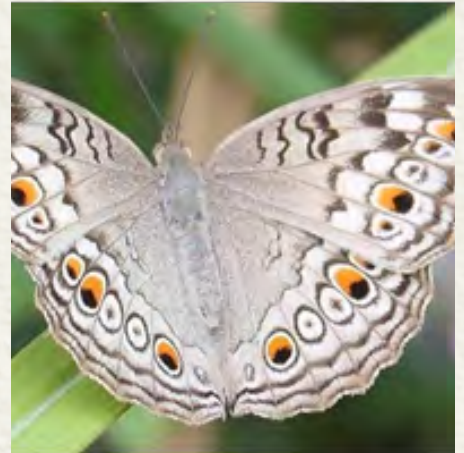
## Butterflies at the Eastern Himalayan Botanic Ark



Tailed Jay



Lime Butterfly



Gray Pancy

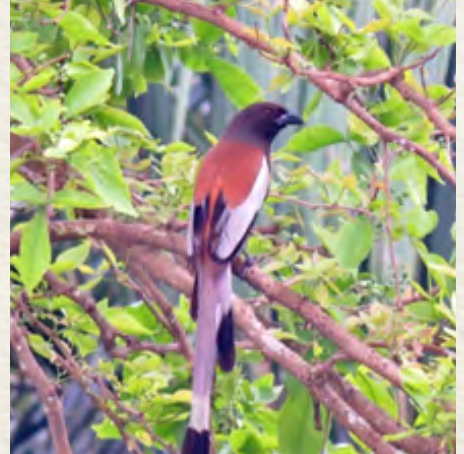
## Birds at the Eastern Himalayan Botanic Ark



Chestnut- tailed Starling



Grey- headed Canary



Rufous Treepie

## Flowers at the Eastern Himalayan Botanic Ark



Zinnia Sp



Mock Strawberry/ Indian Strawberry



Pink Woodsorrel

**ACKNOWLEDGEMENT: Butterflies:** Dr.Ashalata Devi & Kaustav Rakshit, Tezpur University  
**Birds:** Raj Phukan & Debarata Phukan | **Flowers:** Eastern Himalayan Botanic Ark Team



# ETHNOBOTANY STUDY AT THE EASTERN HIMALAYAN BOTANIC ARK

## Background

North-Eastern states of the Eastern Himalayan Region is a land blessed with rich bio-cultural diversity with over 130 major ethnic communities and 427 tribal communities, each with its own developed indigenous botanic and ethnobotanic knowledge through its dynamic interactions with its surrounding natural resources and nature capital. At the Eastern Himalayan Botanic Ark, we are working closely with 7 ethnic communities across the Sonitpur district of Assam - Adivasi, Assamese, Bodo, Garo, Mishing, Nepali and Nyishi settled mostly on the fringes of forest regions.

The project reports a study undertaken on 7 ethnic communities (Adivasi, Assamese, Bodo, Garo, Mishing, Nepali and Nyishi). These communities essentially rely on natural resources for food, health care, religious and cultural practices. The study aims to document ethnobotanically important plant species used by communities in Sonitpur and to present the most important plant species used in traditional medicine and as wild food.



Traditional weaving style of Mishing garments

## Methods

Semi - structured interview was conducted within 360 informants in 7 villages of the study area. Different ailments discussed at the site during study were classified in various

categories. For data analysis, Informant Consensus Factor (ICF), Fidelity Level (FL) and Use Value (UV) were assessed to find agreement among informants about the use of plants as remedies.

## Learnings

- Around 300 plants has been documented as an ethnobotanical important plant from the communities
- Non-timber forest products (NTFP) are spotted in the weekly markets of Sonitpur District of Assam.
- Garo community settled in the foothills of Sonitpur has a rich cultivation of oranges, black pepper, pineapple and organic-dyed products.
- Traditionally designed houses, locally known as Chang Ghar are found in the villages of Mishing and Nyishi Community.
- *Euphorbia neriifolia* L., locally known as Siju, is used as the sacred plant of Bodo Community.
- A total of 41 wild edible plant species belonging to 34 families has been recorded to be used as food by the Mishing tribe. Some of them are *Sarcochlamys pulcherrima*, *Spilanthes paniculata*, *Nyctanthus arbor-tristis*, *Amaranthus spinosus*, *Leucas aspera*, *Houttuynia cordata*, *Hibiscus subdarifa*, *Cassia tora*, etc. which are used for cooking traditional and unique food items.
- *Adhatoda vasica* Nee, *Leucas aspera*, *Centella asiatica*, etc. are used for medicinal purposes.
- The preparation of rice beer locally known as 'Apong' is one of the common activity of the Mishing household.
- Leaves of few species like *Artocarpous heterophyllus*, *Clerodendrum cloebrookianum*, *Scoparia dulcis*, *Solanum indium* are also used in the preparation of 'Apong'. 'Apong' is not only an alcoholic refreshing drink but an integral part of the social, cultural and religious life of the Mishing community of North East India.
- Brave conservation practices and efforts by the community members and its leaders to preserve their natural heritage and resources against political, organized groups and natural disaster influences and impacts.



A total of 301 medicinal plant species belonging to 75 families were inventoried. Leaves and leafy twigs were the most used plant parts and decoction was the mostly cited way of preparation of these medicinal plants species.



Collection of wild edible plants

#### A few plant species used by Adivasi Community



*Leucas aspera* (Durun)



*Drymaria cordate* (Laijabori)



*Centella asiatica* (Boranimuni)

#### A few plant species used by Assamese Community



*Citrus grandis* (Rabab tenga)



*Alstonia Scholaris* (Sotiona)



*Averrhoa carambola* (Kordoi)

#### A few plant species used by Bodo Community



*Musa sp.* (Koldil)



*Cucurbita Moschata* (Rongalau)



*Hibiscus subdarifa* (Tita Tengamora)

#### A few plant species used by Garo Community



Sangkhra (in Garo)



Rajamoni (in Garo)



Thekhongehri (in Garo)



### A few plant species used by Mishing Community



*Albizzia procera* (Tantari)



*Bambusa* sp. (Bah gaj)



*Spilanthes panniculata* (Malsa/Swoni)

### A few plant species used by Nepali Community



*Ageratum conyzoides*



*Akashilota*



*Citrus* sp.

### A few plant species used by Nyishi Community



*Scoparia dulcis*



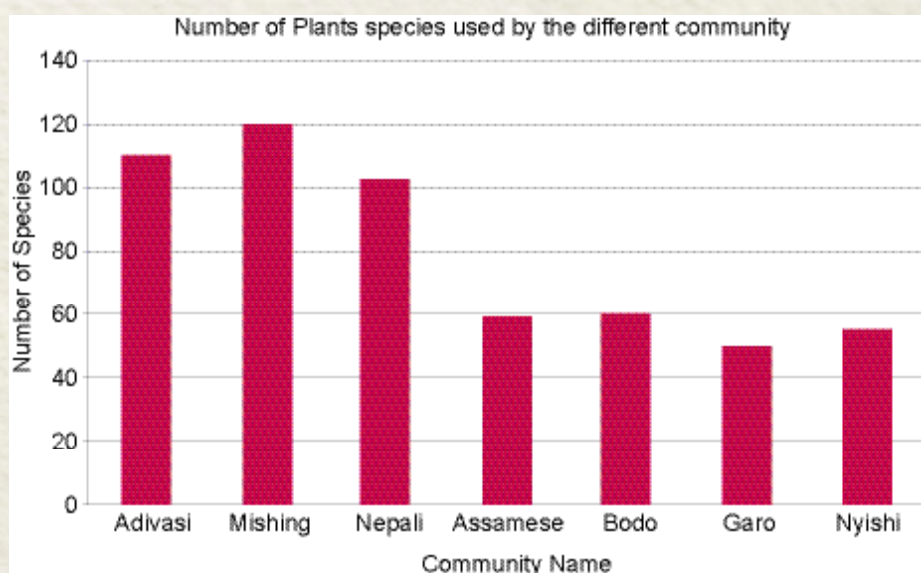
Wild Papaya



*Bos aloo*

## Conclusion

The study highlighted that the traditional knowledge of plants used by people from 7 ethnic communities in the Sonitpur District are diverse. These plants species ensure care to all family members including babies, children, mothers and adults. Through this study, newly reported medicinal plants were identified for further assessment.







Picture Credit : Kosty

At the centre of the Eastern Himalayan Botanic Ark stands a majestic clump of bamboo trees.

Known as Dragon bamboo (*Dendrocalamus giganteus*), or giant bamboo, it is a giant tropical and subtropical, dense-clumping species native to Southeast Asia. It is one of the largest bamboo species in the world.

Found in Bangladesh, India, Sri Lanka, and Southeast Asian countries such as Indonesia, Myanmar, and Thailand, it can grow up to 40 cm per day.



# EASTERN HIMALAYAN NURSERY



Saplings at Eastern Himalayan Nursery

Conservation of threatened, endemic and economically important plant species is important when the world is facing the continuous loss of species at such an alarming rate. The Eastern Himalayan Botanic Ark plays a vital role in ex-situ conservation being as a centre for rescue, recovery, rehabilitation, exploration, documentation and germplasm preservation of plant species.

To aid in the efforts of the Eastern Himalayan Botanic Ark in the Sonitpur district of Assam, the Eastern Himalayan Nursery will serve as a premiere global institution playing a pivotal role as a centre for conservation and propagation of endemic species diversity, enhance the botanical education and building a knowledge bank of Eastern Himalayan flora through world class research. Through the propagation of these endemic species the Eastern Himalayan Nursery also seeks to become a living model of Naturenomics™ making it a self-sustaining source of revenue for the projects at the Eastern Himalayan Botanic Ark.

## VISION

A premiere source of endemic floral species and a global leader in conserving the indigenous knowledge, research and education of the Eastern Himalayas.

## MISSION

Conservation, Preservation and Propagation of endemic floral species of the Eastern Himalayan Region

## Purpose of the Nursery

The objective of the nursery is to explore and collection of different plant species and conservation of endemic and threatened plant species. More specifically project has the following objectives:

- Exploration of rare, threatened and endemic species and facilitate ex-situ and in-situ conservation for protecting and propagation of those species.
- Conserve and propagate the value of plants and its indigenous knowledge.

- To act as a Centre of Excellence for research, education and training.
- To provide Educative and Recreational facilities.
- Develop the concept of smart afforestation to identify afforestation opportunities in the present-day context of overpopulation, urbanization, fragmented lands and weak policy implementation.

## Significance of the Nursery

Ex situ conservation is the conservation made outside of the natural habitat of living organism and in the form of whole plants, seed, pollen, vegetative propagules, and tissue or cell cultures. In the first phase of ex-situ conservation of the plants of Eastern Himalaya we have selected the state Assam of Northeast India for the collection and conservation of different plant species including rare, endangered, threatened and endemic species and setting up a nursery.



## GEOGRAPHIC DETAILS

Name of the Nursery	Eastern Himalayan Nursery
Total area of EHBA	8.9 ha (22 acre)
Total area of the Nursery	2.5 ha (6.24 acre)
Location	Balipara Division, Adabari Tea Estate, Lokra, Sonitpur, Assam
Geo- Position	92°48 43.23 E and latitude 26°50 29.10 N
Elevation	83 m
Soil type	Fine loamy

## EXPECTED OUTCOMES

SOCIAL MOBILITY	
<b>Community Building</b>	The Nursery will bring together people & communities under a formal set of common goals to be able to deliver the aims of the nursery. This in itself will set conditions required for collaboration & cooperation.
<b>Institutional Partnership</b>	Working within an Organizational Framework, with defined goals, roles & responsibilities, will require and enable the communities to seek & build partnerships & collaborations with external institutions (NGOs & Forest Department for Financial & Technical assistance are an example)
<b>Experiential Learning</b>	Working under an Organizational Framework and in collaboration with Institutional Partners will invariably be, both, challenging & rewarding. It would be fair to say that the experience will certainly be “educative” & “empowering”.
<b>Research and Education</b>	Forming partnerships and collaboration with leading institutes to formulate and facilitate research and exploration in endemic plants.

ENVIRONMENTAL BENEFITS	
<b>Carbon Sequestration</b>	The nursery will be a source of endemic plants to the afforestation drive such as programs under the Udalguri Landscape Mission of the Balipara Foundation. These will help in sequestering a large amount of CO2 emissions and also act as carbon sinks.
<b>Habitat Enhancement</b>	Increasing the forest cover will help in protecting and preserving the biodiversity of forests. Planned afforestation can also help in restoring degraded forests thereby helping to conserve and improve the biodiversity of the area.
<b>Species Diversity &amp; Wildlife Habitat</b>	A forest can provide refuge to a wide diversity of wildlife, especially birds, butterflies, insects, and smaller mammals. The landscape provides refuge & passage to Asian Elephants. The creation of a forest or supplementing existing forests by enhancing elephant corridors will undoubtedly benefit these Elephant populations in their search for food, water and refuge.
<b>Reduced Pressure on Protected Forests</b>	This will also decrease the dependency of communities living nearby Reserved Forest areas for Timber & NTFP produce by offering alternative sites for afforestation.
<b>Soil Erosion</b>	Trees and their roots help bind the soil together, preventing the process of erosion.
<b>Ground Water Recharging</b>	The process of afforestation also often gets used as a method for river management, through the process of stabilizing river banks, as well as acting as an interception of rainwater from going straight into the river, thereby aiding ground-water recharging in the region
<b>Prevention of over exploitation of nature</b>	By planting trees and making forests, a hefty portion of the economic needs of people are satisfied, while not destroying what is left of the planet. Afforestation is, along these lines, a practice that will help government and non-government offices as an approach to stop over-exploitation of the planets natural resources.
<b>Deterring Monoculture</b>	Monoculture of plant species was specifically done for revenue generation and as such was of no ecological value. Planned afforestation of endemic species increases the diversity of the species and also increases the ecosystems services provided by the forest.



ECONOMIC VALUES	
<b>Employment Generation</b>	The Project will create direct income opportunities for the participating villages. Core operations such as land preparation, planting, maintenance and nursery operation will create employment for locals in the surrounding areas. The local community will be direct beneficiaries of this.
<b>Timber &amp; Bamboo Supply</b>	Providing Timber and Bamboo supply will yield profitable income to local communities.
<b>Non Timber Forest Produce</b>	The afforestation will invariably provide a multitude of NTFP, ranging from fruits, tubers, wild foods & local medicine.
<b>Research</b>	Research in endemic floral species for sustainable commercial exploitation will help in generating revenue for all stakeholders.
<b>Education</b>	Collaboration with various universities, learning institutes will help to deliver best courses in plant studies.
<b>Revenue Generation</b>	The Nursery product sales and events will be a source of revenue for other projects of the Balipara Foundation.
<b>Self-Sustaining</b>	The nursery will eventually become self-sustaining generating sufficient funds for its own and other external projects.



Kaji Nemu (Lemon)

## PARTNERS AND INVESTORS

Partnerships and investments are essential for the nursery's efforts to succeed. Given the large number of ideas being undertaken we will seek to build partnerships and investments which complement our strengths and enhance the impact of our work. We are seeking investments and not grants which will also include knowledge investments and not only financial.

**Partners can be defined under the following categories:**

1. Knowledge Partners: These are partners who help us build internal

capacity and complement our skill sets. They are an integral part of the Balipara Foundation of our efforts and willing to lend their expertise, financial support and/or access to even larger networks.

2. Investment Partners: These partners support our efforts financially and by lending their experience. Their contributions are invaluable in achieving the full potential of our projects.

3. Technology Partners: At Balipara, we believe in the interface of technology and conservation to achieve our

goals and these partners will be invaluable in realization of these goals.

## FUTURE PLANS

- Increasing the number of plant species available at the nursery to include more endemic species from the current list of 21 plants.
- Offering expert services on landscaping and afforestation using the ULM Forest model of regenerating growth.
- Providing gardening and landscaping tools for home and hobbyist gardeners and plant growers.

It has only been in recent years, that humans, flora, and fauna of this biodiverse eastern Himalayan region are facing challenges from the shifting paradigms of Nature. Through sustainable development we can arrest the adverse impact on this biodiversity rich region and preserve the livelihoods, cultures and natural resources essential to the millions who call it home, the billions more who rely on the region to be their lungs.

The Seeds and Roots Nursery is a positive and actionable step in this sustainable development plan of the Balipara Foundation. Through the efforts of this nursery we hope to serve as an inspiration for conservation of this fragile and sensitive region thereby protecting these pristine forests.



# EASTER HIMALAYAN NATURENOMICS™ SCHOOL



Our Inspiration: (L- R) Richard Leitch, Indonesia, Dr. Peter Raven, USA, Dr. Kamal Bawa, USA, Nicholas Claxton, Dubai & UK, Prof. Jianchu Xu, China at the Eastern Himalayan Botanic Ark

“To keep any of that, to keep the music that we love, to keep the history that we love, the architecture that we love, the poetry that we love, people are going to have to understand and love one another to a degree that is not being characteristic of the world or people ever.”- **Dr. Peter Raven**

## Overview

The Eastern Himalayan Naturenomics™ School was launched on the 10th of October 2016.

Our School is ‘dedicated to inspire the Eastern Himalayan community’ to ‘promote the culture of interdependence’. Through the principles of Naturenomics™ we

engage people of all age or culture to develop ‘sensitisation towards nature through practical activities’. We encourage and empower local experts from the community around the Eastern Himalayan Region who know their surroundings to enhance learning in order to guide our apprentice.

Effective nature related education programmes are designed by our Naturenomics™ team which are personally suitable to the everyday lives of children, youth and adults.



## OBJECTIVE

To create a unique learning experience which combines Nature, traditional knowledge and new learning techniques to create a new generation of ecological crusaders.

## COURSE CONCEPTS

Community & Human Interdependence / Botany/ Zoology

## MISSION

The programme aims to make maximum involvement and participation in the learning process to understand nature as its asset and importance

## PROGRAMME LOCATION

Located inside the Eastern Himalayan Botanic Ark, the Eastern Himalayan Naturenomics™ School (EHNS) offers a unique opportunity of indoor-outdoor learning, combining traditional knowledge, nature and new learning techniques.

## RATIONALE – THE SENSE OF NATURE

There is a wealth of traditional knowledge which when combined with an understanding of nature and modern techniques can lead to an exploration of new techniques and innovations both in conservation as well as in business. However, a lot of this traditional knowledge is confined

to the local community leaders with little opportunity for wider reach. The Eastern Himalayan Naturenomics™ School seeks to make this local knowledge accessible to a wide section of people thereby creating unique learning models and opportunities for innovative leaders.



Educational Nature Trail at the Eastern Himalayan Botanic Ark



Interactive session with Assam Valley School students at Naturenomics™ School





## THE ETHOS

Encourage direct practice	Inspire free-choice education	Target local community
It is important that when an individual is outside, they use all their senses to actively explore; experience, make sense of their environment, and have a sense of independence. Most of the vital school memories are enveloped in actions taken rather than classroom learning.	Free-choice education denotes learning that typically takes place outside of formal education like camping, trekking and walking in a garden or parks or by visiting museums and zoos. A huge degree of choice and control is experienced by the apprentice while they understand the why, what and when concepts. This encourages lifelong learning and developing environmental understanding and responsible action.	Skill building and application must be embedded within the framework of solving tangible glitches. Issues that directly affect an apprentice either at home, at school or in their community are learnt to deal with. We build on from the role of an apprentice to a dynamic citizen. We strive to get an individual from the community involved with many authentic experiences and practices, in real life issues through learning from the local communities, exploring gaps and taking action.

### NURTURING VIBRANT MINDS IN THE NATURE

Eastern Himalayan Naturenomics™ School provides opportunities for students of all ages to take part in hands-on experiential programmes in the natural atmosphere. This type of expedition builds concept, skill, value, talent and the ability to make environmentally responsible choices. The excursions and incursions also provide sustainability from a local cultural viewpoint.

#### FACULTY

We recognise that it is vital to combine classroom learning with experience-based learning strategies. We will obtain best results through our faculty integrated learning in the natural environment combined with classroom learning strategies, and develop partnerships that ensure the continuity of environmental learning experiences in all aspects of school life.

**The faculty will include:** Indigenous Experts / Regional Scholars / National & International Experts / Guest Lecturers.

**Our Faculty who represent the Eastern Himalayan Naturenomics™ School:**

Bhadra Nahak / Rajen Kurmi / Kamison Mili / Gautam Baruah / Gitamani Dutta / Chinu Brahma.



Students from Balipara T.G.L.P School visit the Eastern Himalayan Naturenomics™ School



Hari Badale, Naturenomics™ student learns ploughing techniques



## PROGRAMMES OFFERED 2016-2017

In the year of 2016, we had conducted following programmes.

Programme	Participants
Below 5 years age group	03
6-12 age group	29
13-17 age group	4
18 and above age group	47

### Tezpur Locations

Balipara T.G. LP School | Assam Rifles High School, Lokra | Buragaon, Lokra  
Balipara | Burajan, Lokra | Balipara T.E. | Lokra, Balipara | Balipara |  
Missamari | Pithakhowa | Do Parbatiya | BP Tiniali

All participants were chiefly from Tezpur (different areas and locations)  
except for one participant, Hari Badale from London

### EASTERN HIMALAYAN BOTANIC ARK (EHBA)

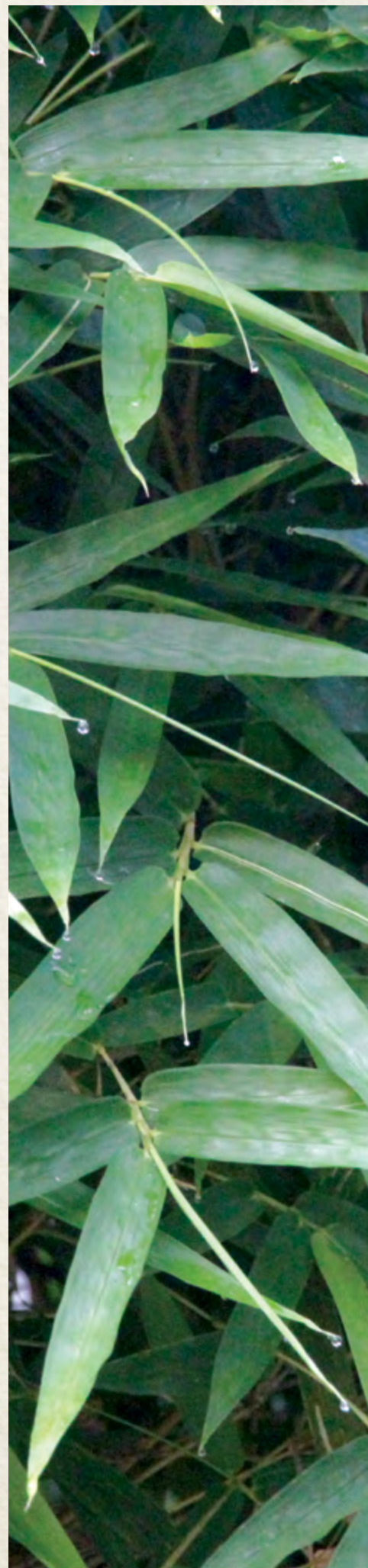
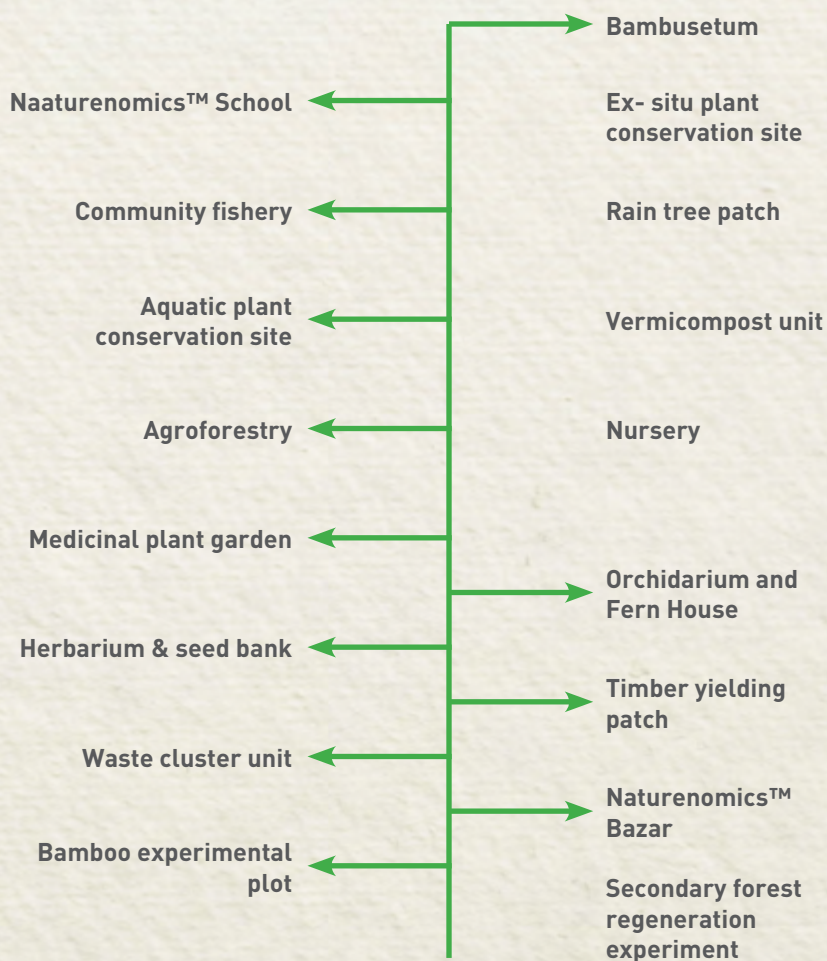
The Eastern Himalayan Botanic Ark is the centrepiece of Balipara Foundation's efforts in the Eastern Himalayas. It is here that visitors can experience a cross section of the eastern Himalayan biodiversity. It serves as a centre for applications research, knowledge accumulation and dissemination.

### NATURE TRAILS & WALKS (Botanic Trail)

Objective: To study and document the biodiversity of the Eastern Himalayas.

The Nature trails and walks is the platform that provides adventure while showcasing the rich natural wealth of the region through Nature Trails and Walks.

### BOTANIC TRAIL STOPPAGE





## PROGRAMMES OFFERED 2017-2018

A series of courses ranging from 1 day to 5 days, to 4 weeks and 8 week courses.

- 1 Day Programme - Nature Play - 6 to 12 Years / 13 to 17 Years
- 2 Day Programme - Nature Play - 6 to 12 Years / 13 to 17 Years
- 8 weeks Programme - Nature Play - 18+ Years

### The Courses offered will include

- Nature play based learning for children
- Nature Trails & Walks (Botanic Ark Trail)
- Summer field school for mushroom training
- Sound of Music – (Nature music)
- Shaping up Nature (Art & Ecology)
- Shaping your Mind (Yoga)
- Care of the Earth and Humanity (Donyi-polo)
- Our Dwelling Places (Vastu)
- Gardening & Agriculture techniques
- Agroforestry



Hari learns to sow a plant

Nature Play	
6 to 12 Years	13 to 17 Years
1 Day Programme	2 Day Programme
PROGRAMME	PROGRAMME TITLE
Morning Circle	Team Introduction
Plants around us	Plant
Soil, Plant cycles	Nursery Techniques
Uses of Natural Resources	Organic Dye
Student & Facilitator Interaction	“Q&A Session”
Amazing EHBA Animals	Animal including
Our Flying Friends	Birds and Insects
Project Environment	Waste Management

### Programme

#### Sound of Music – (Nature music)

Explore the variety of life in the nature

Through a discovery walk students identify and compare the sensual experiences of the natural world.

A trail guides students through a sensory encounter with nature. The sounds of the birds and other forest creatures generate sensual experiences which create anticipation of the day ahead.



Field survey to learn about plants

Hari Badale (R) receiving the certificate from Hardev Singh (L), General Manager, Wild Mahseer





# EASTERN HIMALAYAN NATURENOMICS™ SCHOOL- THE JOURNEY OF HARI BADALE'S NATURE INSPIRED LEARNING

“If you are planning for a year, sow rice; if you are planning for a decade, plant trees; if you are planning for a lifetime, educate people.”



Hari Badale, Naturenomics™ School Student with his Gurus at the Eastern Himalayan Botanic Ark

On January 12, 2017, we had the opportunity to welcome our first full-time student, Hari Badale from London, the United Kingdom to participate in an 8 week Naturenomics™ Learning Programme to understand the importance of interdependence between Nature and Economics in a practical environment. Naturenomics™ relates to capital formation for communities through the creation of 'ecologically compliant assets' in a sustainable manner.

Hari's interest in Nature and sustainability began with Al Gore's "Inconvenient Truth" that lays out facts about threats from global warming and inspires us to think about the impacts of our actions towards the future of the planet. In the 8 weeks of the programme that Hari spent with us, Nature was both his classroom and teacher. The programme was designed to combine a series of "classroom" sessions, field work and interactions with local experts with insights into the

most valuable source of inspiration, the local communities.

Through the programme he explored the significance of partnerships and collaborations for an integrated and unified impact in community conservation. Apart from access to the Balipara Foundation team and projects, the programme enabled opportunities for Hari to work with our partners such as Wildlife Trust of India, WCS, ANCF, Green Guard Nature Organization and Sanctuary Asia.

## The programme structure was centered around understanding:

- Conservation challenges in the face of economic & human aspirations
- Contradictions and Conflict, & its impact on Land, Water, Waste, Energy & Air
- Interdependence between Social, Environmental & Economic Impact

## The Core Course Concepts around which all activities were structured:

1. Community & Human Interdependence: Organizations, Experts and Communities of the Eastern Himalayan region were the focal point of study to assess through informal and formal means of communication, their aspirations to create more harmonious and sustainable models for social ecological and economic neutrality.
2. Botany: Study of the flora in the Eastern Himalayas along with understanding and critically assessing the role of Botany and its impact on our natural resources.
3. Zoology: Learning to identify the different flora in the Eastern Himalayan region along with assessing the role they play in balancing the ecosystem.





Hari at the Herbarium at the Eastern Himalayan Botanic Ark



Learning the craft of making products from bamboo

### Balipara Foundation, Mumbai

Hari's journey started at our Balipara Foundation's office in Mumbai with an introduction to the Foundation, its people, our project and the philosophy of community based conservation that our projects and activities is built around. Hari visited the Bombay Natural History Society Library and Sanjay Gandhi National Park Nature Trail and met our knowledge partners, friends and supporters Bittu Sahgal and Cara Tejpal, from Sanctuary Asia.

### Udalguri Landscape Mission, Indo-Bhutan Transboundary

Hari's field learning began with our field team in Udalguri to understand the role of community based conservation, afforestation and the importance of building social mobility assets to empower the local communities. He explored the impact of human elephant conflict mitigation techniques, techniques and skills to build and operate a Nursery and Project Management techniques through understanding landscapes and stakeholders.

### Eastern Himalayan Botanic Ark, Balipara

The Eastern Himalayan Botanic Ark is a man-made forest, home to the rich biodiversity of the Eastern Himalayas. The Ark has been tended to by communities that live around the Ark. Hari was exposed to the region's rich flora and fauna through nature trails and was guided by our local community members to learn about planting techniques, modern and traditional agricultural tools and methods, traditional weaving and organic dyeing, making handicrafts using bamboo, cane and wood, the local Mishing culture and language, animal behavior, nursery techniques and seed collection.

### Learning through Nature, Science & Technology

Learning outdoors is fun when one can be a part of nature festivals, scientific research and surveys and camping in the wild. As part of the Programme, Hari discovered the rich natural and cultural heritage of the Eastern Himalayas through visits to Eagle Nest Wildlife Sanctuary, Kaziranga Nation Park,

Difloo Biodiversity Park and worked closely with Wildlife Conservation Society to understand the importance of Wildlife Occupancy modelling and ANCF for radio tele-metric study.

### Knowledge Building & Learnings

A critical component of the programmes is to unravel the importance of education in conservation, raising awareness and motivating the next generation of environmental stewards. Hari visited Tezpur University to interact with students, researchers and scholars of the University's Biodiversity Club, Ecology and Biodiversity Laboratory to develop his ideas and thoughts on conservation education.

At Balipara Foundation, partnerships form an important link in adding to our learning and experiences. Our journey with Hari was a learning experience for us on the innovative, enterprising and thought-provoking impact that Young Naturalists like Hari can make for a sustainable future.



Back to basics



Using the rangefinder



# BIOLOGICAL INVENTORIES OF THE EASTERN HIMALAYAS

## *Exploration and Discovery in the Last ShangriLa on Earth- Eastern Himalayas (Eastern Nepal, Bhutan & North East India)*

The Himalaya – the abode of Gods, the land of snow, and the last Shangri La on Earth – is full of life. Designated as a global biodiversity hotspot, the region supports an extraordinarily high level of unique biodiversity. Being at the crossroads of historic and prehistoric trade routes and cultural diffusion, the Himalaya harbours hundreds of different ethnic communities and their associated languages and cultures, and its landscapes are sacred to several of the world's major religions.

After the two poles, the Himalaya holds the highest amount of ice in its glaciers. Eight of Asia's largest rivers originate in the Himalaya, sustaining 1.3 billion people in their basins. Perhaps no place on Earth is more important to humanity than the Himalaya.

The ecosystems of the Himalayas are under extreme pressure from climate and regional extrinsic and intrinsic factors, cumulatively leading to widespread land-cover and land-use changes. Temperature rise and

erratic rainfall from climate change in the high Himalaya has caused glaciers to dramatically recede, increasing the threat of catastrophic flooding, landslides, droughts and disaster events downstream. Biodiversity is also threatened by expanding populations, development pressures, and poor governance and policies.

Despite the extraordinary environmental, cultural, and socio-economic importance of the Himalayan landscapes, and despite the particular susceptibility of high elevation montane regions to climate change, the biodiversity of the region remains unexplored, and the impact of climate change on biodiversity and people remains poorly understood.

Sikkim and Arunachal Pradesh, with Eastern Nepal to the West and Bhutan in between represent the core of the Eastern Himalaya. Together the region may contain 80% of the Eastern Himalaya's unique biodiversity. More than 200 new species of flora and fauna

were discovered from this region from 2009 to 2014. This recent discovery not only confirms the rich biodiversity but also shows a huge potential for discovery of new species if this area is further explored.

### **Aims and objective of Biodiversity audit meeting:**

The Ashoka Trust for Research in Ecology and the Environment (ATREE) and Balipara Foundation (BF) in India, the National Biodiversity Center in Bhutan, and the Koshi Tappu Kanchenjunga Biodiversity Education and Livelihood Terra-Studio (KTK-BELT) in Nepal propose to create a consortium to undertake inventories of selected group of plants and of biodiversity in the states of Sikkim, Arunachal Pradesh and Assam (ATREE and BF), Bhutan (NBC), and eastern Nepal (KTK-BELT) in partnership with a range of institutions in the three countries. Another objective is to examine the impact of climate change on biodiversity.



The World Renowned Botanists at the Biodiversity Audit Meeting at the Eastern Himalayan Naturenomics™ Forum, 2016  
From L to R – Dr. Peter H. Raven-Botanist and Environmentalist, Missouri Botanical Garden, USA, Dr. Kamal Bawa -Founder, ATREE, Bangalore, India, Ranjit Barthakur, Balipara Foundation, Assam, India





Discussions at the Biodiversity Audit Meeting

#### The specific goals of the initiative will be as follows:

1. Catalogue biodiversity, including flowering plants, insects, fungi, lichens and microorganisms, agrobiodiversity and develop a comprehensive database using tools and approaches of biodiversity informatics. Curated data will be made available on the portals- the India Biodiversity Portal, the Bhutan Biodiversity Portal, and the Nepal Biodiversity Portal-open-access platforms that encourage participation from the professionals as well as the citizen scientists. Databases will also include Indigenous Local Knowledge on biodiversity .
2. Identify patterns of species richness, rare and endangered species, and monitor current pressures on biodiversity, including the impact of climate change, trade in wild species, and patterns of resource use; integrate this data into databases outlined above for the use of researchers, students and policy makers.
3. Develop strategic plans for sustainable use, monitoring and management of India, Bhutan, and Nepal's unique biodiversity.
4. Enhance human and technical resources of partners, the state of Sikkim, and other northeastern states, the country of Bhutan, and the eastern region of Nepal, in research, policy analyses, and education related to biodiversity science.
5. Identify, based on findings, key opportunities for action, such as creating new biodiversity corridors, community conservation areas, and wilderness reserves and establish new centers for science education institutions for youth to study taxonomy, climate adaptation, and other regionally relevant topics.





# NATURENOMICS™ BAZAAR

The Naturenomics™ Bazaar initiative aims to promote ethnic communities and locally-made products and also increase outreach of culture and communities of the Eastern Himalayas, by widening their market opportunities. The enterprise runs on the principle of Naturenomics™ - Creating interdependence between nature and economics. The Bazaar includes WUYA, Saneki and the Naturenomics™ Museum and Beehive (Bhelaghor).

WUYA is a social enterprise working towards promoting the culture and communities of the Eastern Himalayas. Their focus is on 'Natural Clothing', which includes attire that makes use of organic dye and hand-woven clothes.

The clothes are sourced directly from villagers in rural areas engaging communities providing them with alternative livelihood opportunities. WUYA also conducts workshops for the general audience, to increase awareness on organic dyes, traditional handicrafts and handlooms.

Saneki is also a social enterprise, promoting traditional weaving and handlooms, but instead of making traditional clothes and attire, they try to infuse ethnic trends, styles and patterns in modern day-to-day attire and products. They also promote wildlife-centric prints in their line of products.

The Naturenomics™ Museum lets visitors view and experience traditional

fishing gears, outfits, cloth weaver, musical instruments and other antique objects that were/are used by communities of the Eastern Himalayas. Visitors of the Eastern Himalayan Botanic Ark get a glimpse into the historical heritage and sustainable lifestyles of these communities.

Beehive (Bhelaghor) is an ethnic restaurant which envisions becoming a hub for diverse cultures and communities of the Eastern Himalayas to come together and present an enriching culinary experience to the guests visiting the Eastern Himalayan Botanic Ark.



Organic Dye Workshop



Authentic local cuisine cooked at Beehive (Bhelaghor)



Hand crafted products from our bazaar



# INTRODUCTION OF WUYA

In ancient Indian language of Sanskrit "WUYA means Weave".

WUYA is considered to be the heavenly spirit that showers happiness, prosperity, wealth and balances tribal life, a belief that still prevails in the Mishong Tribe of Assam – India.

Interestingly, elsewhere for Native Americans, Wuya is also a name given to the most important of the Gods in-charge of Nature (Kachinas) - considered to be a personification of heaven.

Wuya, as the name connotes, was conceptualised to support nature by encouraging a 'natural lifestyle' and at the same time provide sustainable livelihoods to the merited artisans. The journey of every single Wuya product is unique - often encompassing numerous traditional skills and typically taking shape in the hands of indigenous craftsmen.

Wuya is a premium fashion brand for nature lovers. Wuya upholds its values and cultures - a promise the team is proud of.

## ARITA KASHYAP – THE DESIGNER

Arita started her career as Silk clothing designer with a traditional touch and evolved into producing finest Muga silk in-house in most exquisite textures and patterns that have grown to become of international importance.

It all started in the year 2005, with in-depth studies, workshops, field visits and practices. Failures in this journey were learning experiences in understanding the intrinsic mysteries of Muga silk. Arita's deep rooted passion in the field combined with her inherent love for local society and traditions of North East India is her driving force.

### PARTNERSHIP WITH BALIPARA FOUNDATION

WUYA believes their values are a perfect match with the concept of Naturenomics™ and together they can exemplify and deliver true value to artisans as well as customers.

Balipara Foundation and WUYA found it mutually beneficial to work on collaborative programmes and make use of their individual strengths to contribute to research and conservation

efforts with a focus on setting up a nest in Eastern Himalayan Botanic Ark - the Naturenomics™ Bazaar, for the promotion and conservation of ethnic

culture and promoting natural dyeing and weaving of the Eastern Himalayan region.







WUYA- The Naturenomics™ Bazaar

## OBJECTIVES

- Create an awareness to follow a natural lifestyle and support ecological balance.
- Empowerment of local weavers and generate revenue from sustainable and environmental friendly methods and to create a premium global brand image from a local product.

## WUYA – THE NATURENOMICS™ BAZAAR

Naturenomics™ relates to capital formation for communities through the creation of 'ecological compliant assets' in a suitable manner. The current model of economic development forces us to choose between development and sustaining natural resources.

Contrary to this belief Naturenomics™ maintains that this need not be a choice, but that we can have economic development while sustaining our natural sources.





## PRODUCT LINE AT NATURENOMICS™ BAZAAR

High quality hand spun, hand twisted, naturally dyed Eri, Nuni and Muga silk fabrics

- Sarees
- Stoles
- Scarfs
- Yardage

## INITIATIONS

Training Academy

- Educating & Training
- Students
- Entrepreneurs:- New/Local entrants: Local weavers /NGO's

- Hands-on workshops: With Scientists, Designer Bank officials etc,
- Motivation (Pay) & Apprentice : We review, redo and revisit till fine weave is achieved
- Recognition & Certification:- Skill identification
- Short and long term benefits for community
- Projects & Deliverables: Training
- Product Deliverables: All Natural
- Monitor & Measuring: Beginner - Advanced
- Creating sustainable system

## NATURENOMICS™ (WUYA) FESTIVALS

An initiative to bring awareness and also improve socio-economic status of local villages while enjoying local traditions, Naturenomics™ Bazaar is organising festivals that brings all local artisans under one roof and provides them with a platform to display and sell their indigenous product.

As part of this initiative Pakke festival has been organised which was hugely successful, and with the inspiration drawn, we are scheduling more festivals this year.



Community women using traditional weaving method



Products displayed inside WUYA



L-R :Rolf Von Bueren, Co-Founder- Lotus Arts de Vivre , Arita Kashyap, Designer- WUYA, Helen Von Bueren, Co- Founder- Lotus Arts de Vivre , Thailand, Ranjit Barthakur, Trustee- Balipara Foundation



# SANEKI



Mahila Shakti Kendra is a Federation of over 100 Self-Help Groups (SHGs) spread out in 33 villages in the Balipara Block of Sonitpur District. Mahila Shakti Kendra, popularly known as "MASK" was established in the year 2002. MASK has been working for the socio-economic development of the marginalized and poor with a special emphasis on women's empowerment. From that point onwards there was no looking back. MASK has been working extensively in the area of Chariduar, providing skill enhancement and livelihood opportunities to the poor.

In the year 2009, MASK came up with the idea of introducing a platform for the village women so that they could bring their local indigenous products and crafts to the reach of the national and global markets. That is how SANEKI came into existence. SANEKI's aim is to work with tribal communities in the state of Assam in



Saneki stall



an artisan-partner model focusing on the empowerment of traditional tribal artisans by providing them with access to national and global markets as well as enabling them to create innovative and marketable products. We aim to assess whether women have more decision-making power as a result of increased income from an alternate livelihood source as well as assess the improvement in the family's ability to afford essential commodities and facilities, such as health, education, etc. The focus will be to retain the essence of the tribal culture as is reflected in their weaves and traditional crafts while rendering them in the form of modern utility products that can find a place in boutique stores across the country and abroad. We would like to market our products as Elephant-Friendly Crafts and Eco/Big Cat-Friendly Textiles. The conservation of wild animals and the environment as a while is a unifying concern that cuts across industries making us all responsible to act in the best way we can to address the issues plaguing our world today. We believe that there are conscious buyers in the

market today who appreciate efforts being made to find sustainable solutions to these issues.

MASK was able to build a virtuous relationship with Balipara Foundation which helped MASK revitalize and encourage SANEKI.

Along with helping MASK to bring SANEKI back to life Balipara Foundation also helps and supports people affected by human-elephant conflict. To meet this end, an 'Elephant-Insurance' project was developed. This project aims to provide recovery from catastrophes caused by elephant raids, which lead to tremendous and sudden losses to the village community. This program will enable our villagers to repair and rebuild homes. To meet such expenditures, our SHG members pool in an annual fund from each member household. Additionally, external donors can also provide social funds to this project. Compensation will be provided from this fund upon elephant-related destruction of property. This process is equitable as well as feasible. Interested households may come

forward to join this program, without having to pay for free riders.

Our focus is to make sure that we get enough contribution from the members or from other donors, which will be adequate to cover losses, and for our association to remain in sound financial condition and be able to pay elephant damaged claims in full.

This plan will act as key in helping and developing communities affected by this severe problem and also raise tolerance towards Elephants-related problems.



Saneke stall displaying ethnic handloom products



# BEEHIVE (BHELAGHOR)

Promoting local harvest, the Beehive (Bhelaghor) is an initiative towards securing Eastern Himalayan local variants of food crops, predominantly around Assam. Beehive (Bhelaghor), a subset of the Eastern Himalayan Botanic Ark, aims to create livelihood opportunities for local community members belonging to multiple ethnic groups like Assamese, Bodo, Nyishi, Mishing, Nepalese, Bengali, Garo, Rajbanshi and Adivasi through promoting and giving visitors an unique taste of the ethnic cuisines of the Eastern Himalayas. Revenue generated from the restaurant will equally contribute towards local community welfare and conservation of the rich biodiversity of the Eastern Himalayas.

Beehive (Bhelaghor) serves as an ethnic restaurant which celebrates feast after the end of seasonal harvest called "Bihu". The food is fresh, pure and unadulterated, and local community members share a portion of their



Local cuisine prepared at Beehive (Bhelaghor)

harvest to get together and celebrate this occasion. In this sense, Beehive (Bhelaghor) is an attempt to promote home grown food not just once, but round the year. Cooks, helpers and support staff of Beehive (Bhelaghor) come from local communities residing in and around Assam. And all groceries/supplies for the Beehive (Bhelaghor) are brought from nearby villages, all of

which are the organic harvest from the local communities in Assam.

Beehive (Bhelaghor) envisions becoming a hub for diverse cultures and communities of the Eastern Himalayas to come together and present an enriching culinary experience to the guests visiting the Eastern Himalayan Botanic Ark.



Dining area at Beehive (Bhelaghor)



# ELEPHANT COUNTRY

[www.elephantcountry.org](http://www.elephantcountry.org)



Picture Credit : Kosty



Over the years through our interactions and partnerships, we have shared many compassionate views on how we should work out safe habitats for Asian Elephants. Inspired by partners who have achieved commendable success in their efforts towards preserving migration corridors and securing safe ecosystems for Asian Elephants in captivity and in the wild a common need was felt to create a more unified voice for these pachyderms we have launched the Elephant Country Brand, a global call to action for all those working passionately towards Asian Elephant Conservation. Join us at [www.elephantcountry.org](http://www.elephantcountry.org)

The name Elephant Country encompasses all the regions starting from our home in the Eastern Himalayas which covers the snow line to sea line regions of Nepal, Bhutan, North East India and Bangladesh, and encompasses all the regions, Cambodia, China, Indonesia, Lao, Malaysia, Sri Lanka & Thailand where Asian Elephants roam free.

This brand can become a powerful, unified voice for Asian elephants allowing us to reach further, achieve more, collaborate better, influence policy, and make a measurable difference. Inspired by the boundary-less world of Asian Elephants we can work together towards a common goal and become a part of a boundary-less Elephant Country.

At Balipara Foundation we realize that to effectively counter and adapt to the

impact of accelerated climate change we need to work with communities rather than around them. The Elephant Country projects embody this belief and are working prototypes of how much these communities who know the region better than any scientist can teach us how to coexist peacefully with our surroundings.

#### Elephant Country Projects, Products & Services:

Projects	Location
Udalguri Landscape Mission	Indo-Bhutan Transboundary landscape
Asian Elephant Insurance Program	Baligaon, Assam
Asian Elephant Research Centre	Guwahati, Assam
Radio Collaring & Occupancy Modelling	Kaziranga – KarbiAnglong Landscape

Services
Asian Elephant Secretariat

Products
Elephant Country Tea
Elephant Country Apparel
Elephant Country Art

#### In the Future

1. Make Elephant Country a unique global brand encompassing all

countries where Asian Elephants roam wild, to promote the conservation of Asian Elephants

2. 1.5lakh saplings will be planted through the Khalingduar Joint Forest Management Project as part of the Elephant Country: Udalguri Landscape Mission
3. Through the Elephant Country: Udalguri Landscape Mission, prototype holistic community conservation and welfare models to replicate along the entire Indo-Bhutan border (approx. 700 kms)
4. Use technology to supplement and support on ground efforts for Human Elephant Conflict Management, Community Social Assets, etc.
5. Through prototyping and community participation design benefit sharing models for community Afforestation/ Reforestation
6. Facilitate the development of grassroots NGOs to manage the continuation of efforts on the ground
7. Expand the Elephant Insurance program to encompass the Eastern Himalayas and beyond
8. Co-design the Asian Elephant Secretariat to become the platform for verified information exchange on Asian Elephants globally
9. Create a line of Elephant Country Products and Services to generate revenue for all Elephant Country Products. First in this line of products will be Elephant Country Tea



Picture Credit : Kosty





Picture Credit: Saurav Malhotra

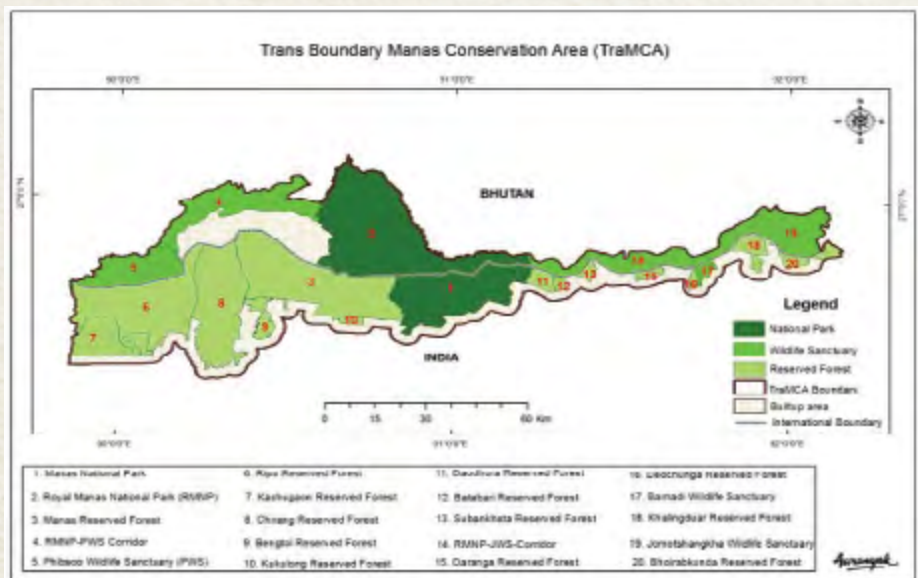
# ELEPHANT COUNTRY: THE UDALGURI LANDSCAPE MISSION

The Udalguri District of Assam is located on the foothills of Bhutan and West Kameng District of Arunachal Pradesh. It is part of the Indo-Bhutan Biodiversity Landscape, also referred to as Trans Boundary Manas Conservation Area (TraMCA).

Rates of deforestation are among the highest recorded in the country over the past decades. As forests are disappearing at a rapid rate — driven by changing paradigms of human aspirations — elephants are moving into areas where people live in search of food, water and even safe places to give birth. Consequently, this results in damage to crops, infrastructure, homes and, many a times, human lives. In retaliation, elephants are poisoned, electrocuted, shot, stoned and harassed. Therefore it is not surprising at all that, in this region as in most others, conservation imperatives are at odds with human aspirations. This complex situation, further, details the ability of “already underprivileged” communities to create opportunities for social mobility.

“Conservation is 10% Science and 90% Negotiations”

- Richard Cowling



## Enabling drivers for social mobility

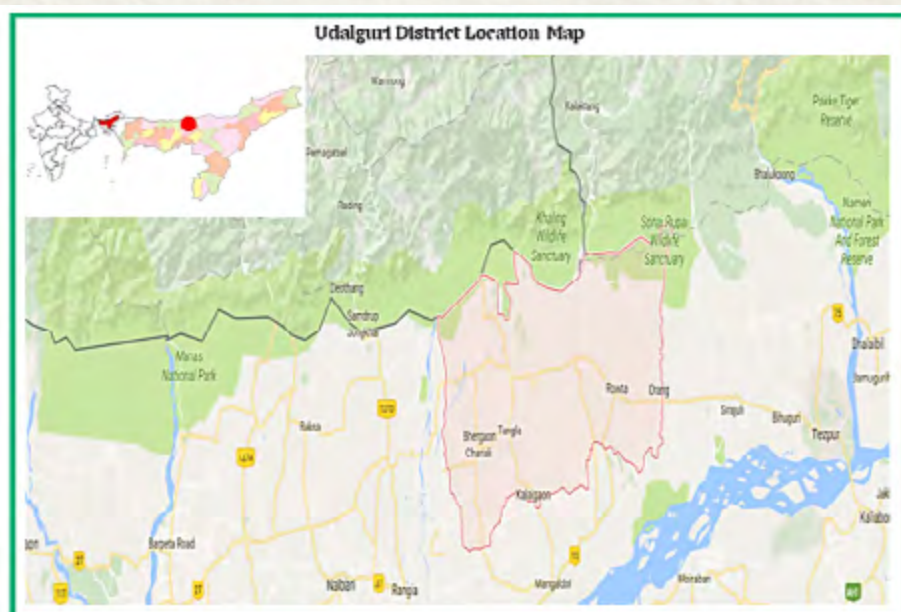
The Mission’s endeavor is to identify drivers for conservation & development and invest in projects that help balance ecological & social outcomes. ULM is an outcome of the realization that the real “decision makers” of biodiversity and natural heritage conservation are the people that share space with the forests and wildlife that needs conserving.

The Mission’s aim is to work with these communities through projects that will enable “social mobility” and thereby, provide these communities with the capacity and opportunity to take voluntary decisions which naturally contribute towards conservation. We are guided by an adopted philosophy towards conservation:



The Team – Udalguri Landscape Mission

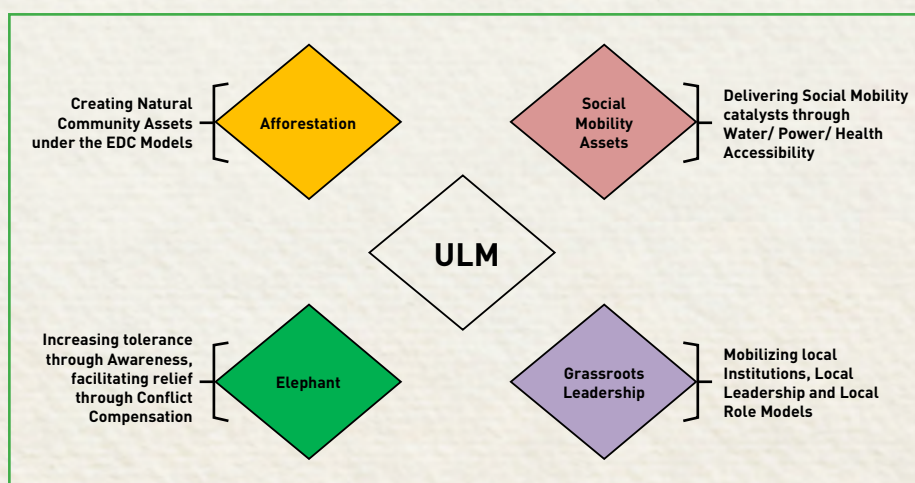




Preceded by consultations with stakeholders- local & regional- we have identified 4 specific Projects through which the Mission will channel its resources and investments over the next 3-5 years, as described in the image below. This multi-faceted approach underlines the Udalguri Landscape Mission's mandate of "Conservation through Social Mobility"

Launched in August 2016, the Mission's lifeline is of 7 years. The Mission's 'Exit Strategy' is to groom local NGOs & EDCs, develop local leadership & role models with the intention of handing ownership back to the people to whom it belongs. Succeeding this, the Balipara Foundation will replicate the model in an adjoining landscape, rich with greater understanding & knowledge.

#### Conceptual Gist:



- The Udalguri District is a prime example of how conservation imperatives are at odds with human aspiration.
- Factoring in 'social mobility' at the core of conservation programs is no longer a choice, but an imperative.
- Conservation Projects need to be owned and managed locally by the grassroots and not remotely by head quarter offices.
- The ULM Concept is "being" built around creating an "exit strategy" through grassroots capacity fuelled through drivers of social mobility.

## Highlights 2016-17 & Targets for 2017-18

Type	Project Heads	Highlights 2016-17	Targets 2017-18
Active Projects	Khalingduar JFM Afforestation Project	The Khalingduar Eco Development Committee (EDC), represented by 12 forest-fringe communities undertook a 6 year project to reforest 500 HA. The EDC received its first round of Funding from a leading National Bank under its CSR Mandate.	<ul style="list-style-type: none"> <li>• Plant 1 Lakh Saplings over 150 HA.</li> <li>• Generate INR 15 Lakhs direct income for the EDC</li> <li>• Create employment opportunities to the tune of 4000 mandays.</li> </ul>
	Elephants on the Line	<ul style="list-style-type: none"> <li>• The 4 Year Project (2013-16) was closed in October 2016. (Detailed Project Report available on request)</li> <li>• Version 2 of the Project, now renamed "Elephants on the Move" was launched in December 2016 under the agency of the Satgoria &amp; Khalingduar Elephant Boards.</li> </ul>	<ul style="list-style-type: none"> <li>• Launch "On-time Compensation" Program through Government-CSR Partnership.</li> <li>• Install Low Cost Solar Power Fence across 30 clusters.</li> </ul>
Conceptual Projects	Water24X7	<ul style="list-style-type: none"> <li>• The Satgoria Water Board was formed in February 2017 with the sole objective of 24 hour water accessibility to all 90+ households.</li> </ul>	<ul style="list-style-type: none"> <li>• Execute 'proof of concept' prototype.</li> <li>• Develop replicable and scalable model for 500 Household Units.</li> </ul>





# ELEPHANT COUNTRY: INDO- BHUTAN LANDSCAPE

## Background

The Northeast India and Bhutan Border Area (699 km) presents a landscape of lush evergreen forests and grasslands that is home to a great diversity of species including Asian elephants, Indian rhinoceros, tigers, and leopards. Recognized internationally for its rich and unique biological resources, this Transboundary region forms the core of the Eastern Himalaya Biodiversity Hotspot and is a World Wildlife Fund Global 200 Priority Ecoregion. For the globally endangered Asian elephant, this corner of the world holds special significance, as it provides refuge to nearly 10% of the species' world population, including 40% of India's remaining elephant population.

Despite their IUCN-protected status and the noted conservation importance of the region, the survival of Asian elephants in this Transboundary landscape is under threat due to rapid human population growth, expansion of agriculture, unplanned clearance for human settlements, logging and other development activities such as construction of roads and railways, all of it well documented and acknowledged.. The severe habitat

destruction and fragmentation of the region reduces natural food resources and leaves little room for large-bodied animals like elephants to travel and forage safely along historical migration routes. Elephant herds and lone males (tuskiers) moving through a range of environments between their winter (Bhutan) and summer (India) ranges frequently encounter humans and development activities. This situation has led to an increase of reported human-elephant conflict (HEC) incidents and their severity, and this trend is expected to continue unless locally effective, targeted intervention occurs. The Asian elephant population is potentially facing an alarming decline if habitat loss continues unabated and conflicts in human settlement zones continue to rise.

## About the Program

The primary target area for this program is the region encompassing Udalgori District (in Assam, India) and southern Bhutan border areas. Udalgori district reports the highest HEC-related human and elephant death rates for the Bhutan-India Transboundary elephant population, as well as the highest recent HEC death rates in Assam and India as a

whole. In 2013 & 2014 alone, news media and local forest departments reported 39 humans and 17 wild elephant deaths. Indian wildlife veterinarians confirmed that these elephant deaths were caused by intentional or unintentional electrocution, poisoning, and shooting of various age-class animals, and tea garden trench losses of elephant calves. At this time, poaching of elephants is not a major issue in the region.

Currently, southern Bhutan serves an important role as a less populated safe haven for the Bhutan-India Transboundary elephants. However, HEC rates are increasing in southern Bhutan, and will likely continue to rise with further economic growth and development. Recent government programs to provide solar electric fencing to Bhutanese villages hardest hit by human-wildlife conflicts (primarily due to wild pigs and elephants, with some villagers reporting up to 40% average annual crop loss) demonstrates a growing concern with human-wildlife conflicts in Bhutan. To maintain current areas of refuge for Asian elephants and other wildlife in the Bhutan-India border region, the Proposed Program will be motivated by primary goals:



## Three Primary Goals

1. Decrease the frequency and severity of HEC
2. Build local capacity for reducing HEC and protecting elephant populations
3. Create a sufficient Transboundary habitat conservation network (habitats and corridors) for elephants to thrive in their natural settings

These goals reflect the oft-repeated desires of stakeholder Governments & Organizations to take a larger view of HEC & Habitat Fragmentation as an issue that must be addressed at a grassroots level, but across the landscape and between cultures of two countries, to conserve a shared elephant population as an important umbrella species for the region

Developing an Indo-Bhutan Transboundary Asian Elephant Landscape Conservation Program:

To move the project to actual delivery on the ground three key stages have been identified. The 'Project Development' stage will focus on collecting and collating hard facts and data from the ground and devising a Detailed Project Report (DPR) that will form the framework of the proposed park. On completion of the DPR, the

project will move to the next phase, i.e. 'Approvals & Mobilization', wherein both Governments of India & Myanmar will confirm their consent in the form of a Memorandum of Understanding (MoU). The MoU will detail all Legal & Operational frameworks required to sustain the Project in the long run.

### PROGRAM HIGHLIGHTS

#### Stage 1: Project Development

##### 6 months

- Habitat Sustainability Mapping of the proposed Park
- Design Detailed Project Report.
- Submit DPR to Governments of India & Bhutan

#### Stage 2: Approvals & Mobilization:

##### 6- 12 months

- Confirmation from both the governments of India & Bhutan.

- Develop a Legal Framework for the Park.
- Develop a joint Forest Reserve Team to protect and preserve the area.
- Develop the structure to manage the park.
- Develop Compensatory Mechanisms

#### Stage 3: Sustaining the Program:

##### 5 years

- Develop wildlife corridors connecting both sides of the border.
- Develop Compensatory Mechanisms for HEC affected communities & individuals
- Develop Buffer Zones with strict protocols.
- Develop 'biodiversity assets' for sustaining the population settled along the borders.

## Project Site Map





# ELEPHANT COUNTRY: ASIAN ELEPHANT SECRETARIAT



[www.elephantcountry.org](http://www.elephantcountry.org)

Asian Elephant Secretariat is an outcome of “Asian Elephants in the Wild” Talk 2015, and was launched during the Eastern Himalayan Naturenomics™ Forum in 2016, driven by the desire to identify need gaps in Asian Elephant Conservation and collaborate for greater success. It is one of the key components of “Elephant Country”, Balipara Foundation’s global brand for raising awareness and funding for Asian Elephant Conservation related projects. The emphasis will be on mobilizing Communities that reside alongside the Elephants, leveraging technology to benefit Asian Elephant Conservation and will offer products and services that promote securing Asian Elephant Habitats and encourage harmonious interdependence.

Inspired by the borderless existence of Elephants, the Asian Elephant Secretariat is a virtual platform aimed at creating a Jumbo Borderless

Network of Collaborators to bridge gaps in Asian Elephant Conservation through partnership building, raising awareness, knowledge building, share resources and funding, advocacy, real-time spatial access to Asian Elephant information and emergency support in conflict situations, thereby, facilitating the shared goal of creating safe havens for Asian Elephants and those Communities, who live in Elephant Country.

The need for the Asian Elephant Secretariat arises from the fact that multiple organizations today contribute to substantial amount of time and effort towards Asian Elephant Conservation but it leads to “duplication of efforts” and with the sheer amount of information that is now instantly searchable there is also a danger of false information. This leads to lack of verifiable information, under-utilization of funds, missed opportunities for collaboration and a lack of uniformity in

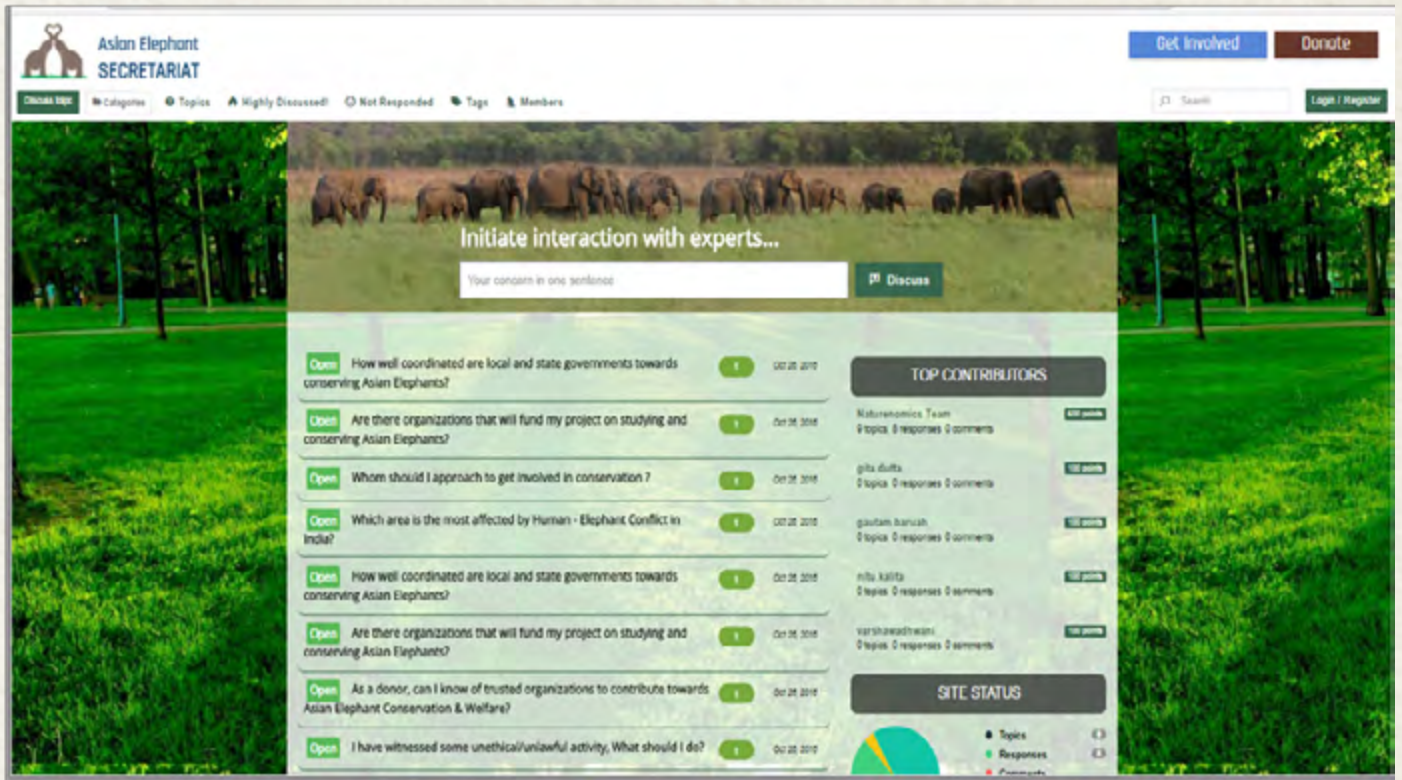
measured outcomes and understanding of the pachyderms’ needs. In addition to this, there is the limitation of geopolitical boundaries that limit us. The Asian Elephant Secretariat seeks to transcend these real and virtual boundaries as platform to reach out to our peers, showcase our efforts, share resources and data, seek volunteers and funding for our projects and create measurable goals and accountability.

Membership to the Asian Elephant Secretariat is free for the first year. One can register to become a member/Sign an MOU with us. The Asian Elephant Secretariat has the following features:

1. Asian Elephant Library
2. Asian Elephants Experts Committee
3. Asian Elephant Helpline
4. Asian Elephants Spatial View
5. Asian Elephant News Portal

**Helpline No:1800-300-00949 (Toll Free)**





Join Us- Become a member on the website

## Future

We envision including more tools to the platform as we begin our journey together to identify the need gaps in Asian Elephant Conservation. As part of Elephant Country we will have the power to reach further, achieve more, collaborate, and influence policy. Together we have the power to make a bigger impact and United we become a Jumbo Borderless Elephant Country.

### Building Partnerships – The Way Forward:

#### Knowledge Partners

- Organisations working towards conservation of Asian Elephants
- Researchers and Universities
- Domain Experts
- Governments
- Security Forces
- Libraries & Museums
- Individuals, Educators, Students

#### Technology Partners & Investors

- Every Organisation working towards conservation of Asian Elephants
- Researchers and Universities
- Domain Experts
- Governments
- Security Forces
- Google
- Tata Consultancy Services



Elephant herd in the forests in Udalguri District





Representation of nine countries at Eastern Himalayan Naturenomics™ Forum, 2016 at Vivanta by Taj, Guwahati, Assam, India

## MULTI-DISCIPLINARY CONSERVATION AT THE EASTERN HIMALAYAN NATURENOMICS™ FORUM 2016

Traditionally Conservation Conferences are fairly uniform affairs. The attendees are mostly experts and agencies working in conservation. This year the Eastern Himalayan Naturenomics™ Forum sought to challenge this norm. With the conviction, that in order to increase success of conservation methods, we must expand the group of stakeholders at such conferences. The Forum saw participation of experts from industry, students, educators, government and non profit agencies from over 13 countries.

This multi-disciplinary group came together over two days, November 8th and 9th, 2016 to discuss a broad swathe of issues ranging from focused discussions on the plight of Asian Elephants in the wild and in captivity leading to the announcement of the Asian Elephant Research Centre at the College of Veterinary Sciences, Assam.

Balipara Foundation's, Robin Eastment set the cat among the pigeons by questioning the traditional concepts of conservation, which are animal centric and questioned their efficacy against the creation of more inclusive conservation models, which offer



Ranjit Barthakur, Founder Trustee, Balipara Foundation, announcing the creation of the Asian Elephant Research Centre at College of Veterinary Sciences, Assam

tangible alternatives to those who dwell within or around forests and protected areas.

Astute moderators like Nicholas Claxton, CEO WoW Media, Bittu Sahgal, Editor, Sanctuary Asia, Anish Andheria, President, WCT and Raman Srinivasan, TCS took the lead from this and prompted incisive discussions across a wide variety of subjects including the Future of Asian Elephants, Creation of more inclusive conservation models, creation and adherence of policy and

laws and security in the age of technology in conservation. The audience members and panellists at the Forum actively engaged each other, both on and off the dais to present their points of view and add flavour to the conversations. This led to spirited discussions presenting different perspectives possibly leading to radical collaborations and new and alternate methods of thinking on major issues.

These insightful panel discussions were complemented by innovators who



presented their traditional challenging ideas for conservation by tracing the roots of conservation through the opposing viewpoints of Ashoka and Kautilya, helping us question whether conservation is only an altruistic pursuit or one which can also be beneficial in the capitalist economy.

The crescendo that was built during the one and a half days of discussions and presentations culminated in the Balipara Foundation Awards and honouring of Late Shri Rabindra Nath Barthakur and his principles, which has inspired many people and laid the foundation of Balipara Foundation in the year 2007.

The Balipara Foundation Awards was instituted to bring into focus conservation case studies and real life Crusaders of the Eastern Himalayan Region. Carrying forward the legacy and seeking inspiration from environmental leaders, the Balipara Foundation Awards this year honoured 12 ecological champions of the Eastern Himalayas tirelessly working to demonstrate and implement the ideals of Naturenomics™, which evangelizes the symbiotic relation between Human Activities and Natural Capital through creation of natural assets.

The Balipara Foundation Lifetime Service Award, the one for the individual of legendary proportions was presented to Dr. Tirtha Bahadur Shrestha, a leading authority on Nepal's biodiversity and taxonomic classification. The foremost botanist and a hero of environmental conservation of endemic plant species in Nepal, Dr. Shrestha joins the esteemed ranks of Shri B. M. Khaitan (India), Shri Dasho Paljor Benji (Bhutan) and Ms. Anne Wright (Eastern Himalayas) completing a Full Circle of champions of the Eastern Himalayan region.

The evening was capped off by a unique jugalbandi between renowned technologist, Shri Subramaniam Ramadorai, master flautist, Shri Hari Prasad Chaurasia and acclaimed vocalist Shrimati Mala Ramadorai.

This harmonious collaboration embodied the foundation of the Eastern Himalayan Naturenomics™ Forum 2016, that "Real innovation happens at the edges of disciplines". The Eastern Himalayan Naturenomics™ Forum 2017 will be held on November 2nd and 3rd, 2017 in Guwahati, Assam, India seeking to elevate this multi-disciplinary dialogue on conservation to new heights.



Incisive discussions across a wide variety of subjects at the Forum



The World Renowned Botanists at Balipara Foundation Awards, 2016  
From left to right – Dr. Peter H. Raven-Botanist and Environmentalist, Missouri Botanical Garden, USA, Dr. Kamal Bawa -Founder, ATREE, Bangalore, India, Prof. Jianchu Xu - Kunming Institute of Botany, China



Dr. Kamal Bawa- Founder, ATREE in conversation with  
Dr. Anwaruddin Choudhury, IAS, Assam



## Captive Elephant : Past, Present & Future

Dr. K.K. Sarma, Assam Agricultural University, Assam, India



Dr. K.K Sarma talks about the changing dynamics of human- elephant relationship

Dr. Sarma spoke about the changing role of elephants through the ages. Elephants have been revered in ancient India as a symbol of fertility, wealth and prosperity. From being idolized and worshipped during the ancient times to the animal being perceived as a beast of burden during colonialization, there has been an increase in the demand for captive elephants. Elephants are used for the purpose of logging, recreation in zoos and circuses, protection of Sanctuaries and National Parks and tourism. We need to recognize the importance of handling captive elephants sensitively and consider all scientific, cultural and legal aspects of caring for and protecting them. With the increase in human population, there is scarcity of land, water and other resources making co-existence a challenge and thus, giving rise to Human Elephant Conflict situations.

## Captive Elephants As Ambassadors of Species

Lisa Mills, University of Montana, USA



Lisa Mills shares her view on the need of tourism certification guideline and ethical guideline by country and globally for the captive and wild elephant



Lisa Mills spoke about recognizing and managing the three categories of elephants - captive, wild and wild but habituated to human activities. She believes that captive elephants can be ambassadors for their wild counterparts. Lisa and, Julie Stein of the Wildlife Friendly Enterprise Network, proposed a new Elephant Friendly™ certification concept, which is a product and service certification guideline for products like tea, coffee, spices and services such as tourism that help inform consumers and users on organizations that have complied with elephant friendly business practices helping reduce human elephant conflict and habitat destruction. They emphasized on the urgent need for Tourism Certification guidelines and country specific and global ethical guidelines for the use of Captive Elephants.



## Effect of Climate Change on Survival Patterns of Myanmar Timber Elephants

Dr. Khyne U Mar, University of Sheffield, UK and Myanmar



Dr. Khyne U Mar speaks about the growing effects of climate change on the Captive Elephant in Myanmar

Dr. Khyne U Mar spoke about the impact of climate change and workload on the fecundity and mortality across all ages and both sexes of Captive Elephants. Myanmar holds the second largest population of semi-captive Asian elephants (n=5583), more than the wild population in the country. Which is why Myanmar needs to develop welfare and tourism standards for managing the captive elephant population. She emphasized on the need for regulation standards for elephant welfare (determining work load as per age, size, and height, gestation period of elephants, duration and month of year to work with elephants) as well as the importance of mahout training, mahout registration and on the job training to be in place. According to Dr. Khyne U Mar, Ecology, Elephant and Ecotourism are interlinked with each other.

## Introducing the Asian Captive Elephant Working Group

John Roberts, Golden Triangle Asian Elephant Foundation, Thailand



John Roberts shares the vision of the Asian Captive Elephant Working Group

John Roberts introduced us to the Asian Captive Elephant Working Group. The Group's vision is to create a functional international working group that brings together invested parties in the pursuit of creating a sustainable life for the captive elephants in South East Asia. Tourism must be non-invasive, non-disturbing and benefitting to the local community. Captive elephant tourism can help if it is non-damaging to the wild population. Elephant welfare is paramount and it can provide an educational experience for guests and mahouts. The Group emphasizes on promoting responsible tourism, setting best practices and implementing monitoring systems to ensure a safe working place for Captive Elephants and at the same time making it tangible for their caretakers.





## Conservation Lessons from Ashoka and Kautilya

**Bruce Rich, Environmental Law Institute, USA**

Mr. Bruce Rich brought forward an interesting discussion on the conservation lessons from Ashoka and Kautilya. Ashoka emphasized the need to protect species and habitats of elephants. His philosophy was deeply rooted in South Asian Culture specifically Dharma. Ashoka followed Dharma and the ethics of non-violence.



Bruce Rich tracing the roots of conservation back to the age of Ashoka and Kautilya

During his 20th reign his pillars depicted the message of not harming or killing beings or life forms. The 5th pillar lists animals exempt from slaughter and called for the protection of all four footed animals that are not eaten. It also depicted important messages for conservations such as fields not being set on fire in order to protect the animals. After 28 years of reign, he had tried to convince people not to harm animals by (i) legislation (ii) persuasion/meditation. Kautilya was the Chief Minister of Chandra Gupta Maurya. He gave more importance to materialistic evolution. He was however, a historical figure who placed importance on the relationship on earth, nature and humans. His views were seen to be more utilitarian and he was better known for his views on foreign policy.

## Asian Elephants-Are we Succeeding?

**In Panel: Anupam Sharma, Bibhab Talukdar, John Roberts, Khyne U Mar, Dr. M.D. Madhusudan, Nicholas Claxton (session moderator) , P.S. Nongbri, Prof. Raman Sukumar, Ruth Powys, Sonam Wangdi, Supong Nukshi, Varun Goswami, Vivek Menon**



L-R : Ruth Powys - Elephant Family, UK and Nicholas Claxton - WoW Media, Dubai & UK from the panel

Moderated by Nicholas Claxton, the session prompted deliberations on decisions on goals for Asian Elephant Conservation and benchmarks for measuring that success in future:

- Good number of elephant population?
- Habitat connectivity?
- Minimize HEC?

National level policy framework is necessary to deal with HEC and needed to take effective management action to mitigate or minimize HEC. At the same time political will power in policy making and decision making is very much important. In Assam people live in harmony with elephants and even though there are lots of HEC incidents, there are still examples of success stories on interdependence and harmonious living. Elephant corridors are an essential part of the strategy to conserve elephants, to maintain gene flow across populations and to preserve the natural home range.



## Conservation and Social Mobility

Robin Eastment, Balipara Foundation, Assam, India



Robin Eastment presents on the significance of social mobility in bridging the gap between biodiversity conservation and human well-being

Robin Eastment raised a critical question on who are the “decision makers” in conservation. If one thinks it is the Government and the many Conservation Organizations then one is being naive. The real decision makers are the people that live alongside the forests and share a “real” relationship with the wildlife living in it. If these people are not allowed the opportunity to choose conservation as a complimenting choice to their own life style, conservation laws and projects and conferences will hardly ever achieve anything meaningful. Therefore, Biodiversity Conservation and Human well-being are not two different things and “Social Mobility” is the key to creating an interdependence between both.

## The Oxymoron: Conservation Vs. Human Aspirations

In Panel : Alka Bhargava, Gen (Rtd.) Arun Sahni, Arupjyoti Saikia, Bibhuti Lahkar, Bittu Sahgal (session moderator), Bruce Rich, Chandan Sharma, Prof. Jianchu Xu, Dr. M.D. Madhusudan, Satya Prakash Tripathi, , Sonam Wangchuk, Yash Shethia



Bittu Sahgal- Founding Editor, Sanctuary Asia, Mumbai, India from the panel addressing the participants on empowering the local people to make conservation actions successful

The panel The Oxymoron: Conservation Imperatives Vs. Human Aspirations moderated by Bittu Sahgal addressed that no oxymoron needs to maintain balance and maintain sustainability. Aspirations of people can be taken

care at the macro level: dams and at micro level: livelihood of communities. Economic gap needs to be addressed by the government and religious foundation of nature needs to be studied. Local specificities and empowering local

people is needed to make conservation actions successful. Not one is certain about what all has to be done to obtain balance between nature and human. But it's certain that high price needs to be paid for damage to nature



## Biodiversity Landscapes, Human Interactions and Nature Capital

Dr. R. Prabhakar, India Biodiversity Portal, Bangalore, India



Dr. R. Prabhakar talks about the Indian Biodiversity Portal, a participatory system that aggregates and disseminates biodiversity information under open access for India

The India Biodiversity Portal is an initiative to provide a comprehensive biodiversity information system that integrates taxonomic status, spatio-temporal distributions and species descriptions; and serves it under open access. It provides an inclusive model that allows broad based participation and collaboration from experts and amateurs. Currently the portal has descriptions of over 22,044 species, and has aggregated approximately 1,290,000 observations covering more than 30,000 species, which already constitutes a unique source of information for scientists and stakeholders in conservation. There is a separate NE-India Biodiversity Portal having 19,832 observations. The amount of data generated and to be generated in the next few years by this portal will certainly help the effective implementation of biodiversity conservation and management in one of the most ecologically diverse countries in the world. The Platform simultaneously runs a very active Bhutan Biodiversity Portal, where the veracity of data and participation is higher than in the India Biodiversity Portal. For the platform to be more successful, digital penetration in the country and access to tribal communities for contribution is critical.

## Vertical University

Rajeev Goyal, Koshi Tappu Kanchenjunga region, Nepal



Rajeev Goyal, Co- Founder- KTK- Belt, Nepal speaks on his work, his passion and vision for the "Vertical University", KTK- Belt, Nepal and its objectives

The most unique conservation models of recent times were presented by Rajeev Goyal, Co-Founder Vertical University and, Lisa Mills, Univ. of Montana and Julie Stein of Wildlife Friendly Enterprise Network.

Vertical University seeks to turn

education on its head by conceptualizing an innovative method of conservation education through the learning grounds in the Koshi Tappu Kanchenjunga region in eastern Nepal. Anchored across 5 campuses in the region, the organization seeks to instil, in the local populations, a sense of pride in the rich biodiversity

of their region while learning how to leverage this natural richness into sustainable skills and business models. This model could create a fundamental shift in the way we teach conservation, value our natural assets and leverage our biodiversity.

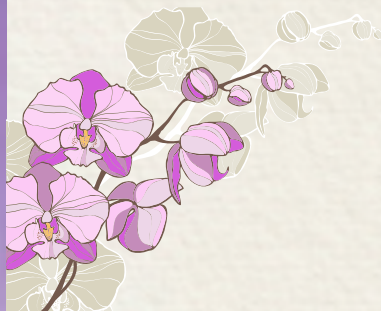


## Water Impending Crisis: Karunakara Reddy

Karunakara M. Reddy, SMAAT India Pvt. Ltd., Telangana, India



Each day in India 1800 humans die as a result of drinking contaminated water. The presentation by Karunakara Reddy raised the concern for creating a walk for water which involves building awareness, a water pledge, restores dried bore wells and aquifers, conducts water audits and provides water awards.



Mr. Karunakara M. Reddy, Chairman & MD- SMAAT India, emphasizes on the importance of saving water and highlights "Walk for Water" – an initiative by SMAAT India

## Laws of the Jungle: Policy and Governance

In panel: Dr. Anwaruddin Choudhury, Anish Andheria (session moderator), Bibhab Talukdar, Bruce Rich, Kartik Shukul, Prashant Choudhury, P.R. Marak, Ravi Singh, Rohit Choudhury, Dr. S.K. Niraj, Vivek Menon



L-R : Anish Andheria, President – Wildlife Conservation Trust, India and Vivek Menon, Executive Director and CEO- Wildlife Trust of India from the panel

The panel Laws of the Jungle: Policy & Governance moderated by Anish Andheria, President, Wildlife Conservation Trust had an interesting discussion on the importance of Wildlife crime legal cells which are required

and essential as courts are ill equipped to handle it. Right To Information can be an effective tool to ensure laws are implemented. There are different laws existing to protect wildlife and forest. However, the need of the hour is to

give more emphasis on implementation of those laws. At the same time it is necessary to empower forest officials and provide underground training to counter insurgency.

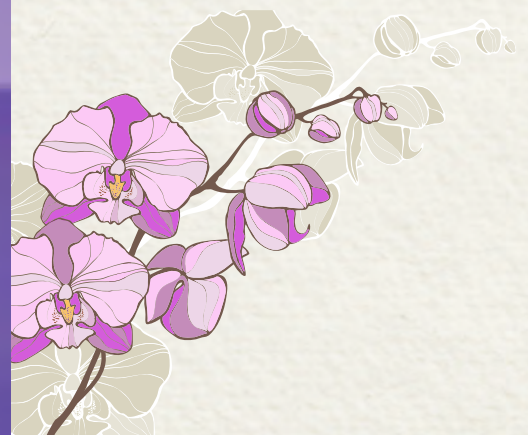


## Drone's Eye View of Conservation: UAVs and Conservation

Joydeep Bhattacharya, University of Louisiana, USA



Joydeep Bhattacharya pointed at the Drone's Eye view to conservation, which is an important tool in animal conservation and will replace radio collars in the near future. He recommended technology to be used for animal and plant observation, monitoring behavioural and physiological response of animals and stress in plants. It is an excellent tool for surveillance and the importance of its usage has been emphasized.



Joydeep Bhattacharya- University of Louisiana, USA emphasizing technology as an important tool in conservation

## Innovative Funding Models: Elephants & Tea

Lisa Mills, University of Montana, USA and Julie Stein, Co- Founder, Wildlife Friendly Enterprise Network ,USA



Another fascinating concept which promotes the protection of biodiversity by more mainstream industries is Lisa Mills and Julie Stein's concept of the Elephant Friendly™ certification. The presentation by Julie Stein and Lisa Mills gave an overview on how this certification seeks to incentivise industries to promote business practices and infrastructure which promotes conservation and the well-being of Asian Elephants, by creating a value chain which rewards their efforts through higher returns on investment and opening new markets for business.

L-R: Julie Stein, Co- Founder, Wildlife Friendly Enterprise Network and Lisa Mills - University of Montana, USA, share an overview on Elephant Friendly™ Certification which has been developed as a result of years of research and community-based conservation in Assam



## Policing the Protectors: Technology and Security

In panel :Raman Srinivasan (session moderator), Keshav Kumar, M.K. Yadava, Sonam Wangchuk, Kartik Shanker, Andy Merk, Lailani Fouad, Gen (Rtd.) Arun Sahni



The panel Policing the Protectors: Technology and Security brought forward some fascinating discussions on new technology that exists today and if utilized in the correct manner, can be beneficial for fostering Conservation efforts.

Over the years, Wildlife Management has evolved with new technologies enhancing wildlife conservation efforts. Technology if leveraged correctly can help fill the gap of limited human resources and improve efficiency. However, there is still need to develop and improve certain technologies to address specific areas in conservation.

L-R: Lailani Fouad- Nature and Wildlife Association, Raman Srinivasan- Tata Consultancy Service, M.K. Yadava-DoEF, Assam, Gen (Rtd.) Arun Sahni, Sonam Wangchuk- Bhutan, Kartik Shanker- ATREE from the panel



Assorted tea tasting, refreshing taste of Assam at the Eastern Himalayan Naturenomics™ Forum, 2016



Mr. Ranjit Barthakur, Trustee- Balipara Foundation addressing the participants at the Eastern Himalayan Naturenomics™ Forum, 2016



# RESOLUTIONS AND OUTCOMES- EASTERN HIMALAYAN NATURENOMICS™ FORUM, 2016

## 1. Conservation: We need to re-define conservation to make it more tangible for all stakeholders.

### Actions:

- Curate and document case studies of conservation of natural assets (Land, Water, Carbon)
- Work with eco-champions, communities, governments, NGOs and for profit agencies to develop sustainable, scalable community based conservation models moving conservation into mainstream business models
- Develop consistent systems and metrics to measure the social, economic and ecological impact of conservation projects
- Build platforms and partnerships to focus efforts on conserve of complete habitats and ecosystems

## 2. Technology: Technology will increasingly play a pivotal role in conservation

### Actions:

- Use technology to empower those who guard nature capital
- Sensitize communities and enforcement officials to the use of technology both to use as a tool for conservation and, to combat poaching and trafficking
- Create laws to regulate the management and deployment of technology

## 3. Media: Traditional and new media can provide a powerful voice for making conservation tangible to wider audiences

### Actions:

- Create powerful narratives to make conservation more tangible and mainstream
- Build partnerships to promote positive news stories and to highlight attacks on natural assets

## 4. Asian Elephant Secretariat:

### Actions:

- Define the objective and purpose of this platform and set measurable goals to be achieved by the Elephant Secretariat Community
- Create Nodal Offices and appoint officers in Assam, Arunachal Pradesh, North Bengal, Sikkim,

Myanmar, S. China, Eastern Nepal, Thailand, USA and UK.

## 5. Elephant Science: Leverage science and research to deepen the impact of conservation efforts

### Actions:

- Establish a Captive Breeding Knowledge Research Centre at the College of Veterinary Sciences, Assam for scientific research on Asian Elephants in Captivity

## 6. Education: Creating interactive education modules to engage generation next in learning about their natural inheritance

### Actions:

- Naturenomics™ School to partner with global universities and organizations to create certified education modules for studying practical conservation techniques
- Create interactive apps, games, etc. to engage “generation next” in exploring conservation and the build knowledge about natural assets

## 7. Elephant Country: Create a multi-disciplinary approach to promote conservation of Asian Elephant habitats and migration corridor by creating sustainable economic and social incentives

### Actions:

- Elephant Insurance schemes to be created for villages in the Balipara and Udalguri regions of Assam as test markets and to be replicated across all Asian Elephant Countries
- Experiment with community conservation models to promote sustainable conservation by creating incentives for communities to protect their natural capital

- Create awareness and fundraising opportunities through Products and explore partnerships with certification agencies such as Elephant Friendly™

## 8. Digital Platforms: Explore the creation of digital platforms to facilitate and streamline conservation efforts, and promote collaboration

### Actions:

- Expand the functionality of the Asian Elephant Secretariat to include project management and collaboration tools for agencies to collaborate on efforts to rejuvenate Asian Elephant habitats
- Explore creation of digital platforms for raising awareness and creating opportunities for biodiversity education such as MOOCs, knowledge bases, etc.

## 9. Experiments: We need to recognize the importance of science and prototyping to further the impact of conservation

### Actions:

- Create a Herbarium of Eastern Himalayan flora to study and exhibit the biodiversity of the region

## 10. Fundraising: We need to explore new avenues for creating sustainable capital sources for long-term conservation efforts

### Actions:

- Explore creation of alternative funding opportunities for conservation such as an Elephant Fund and a Green Bond and Social Impact Funds for continued conservation efforts in the Eastern Himalayas.



A mother elephant and her baby stroll alongside the Diphlu river in Kaziranga

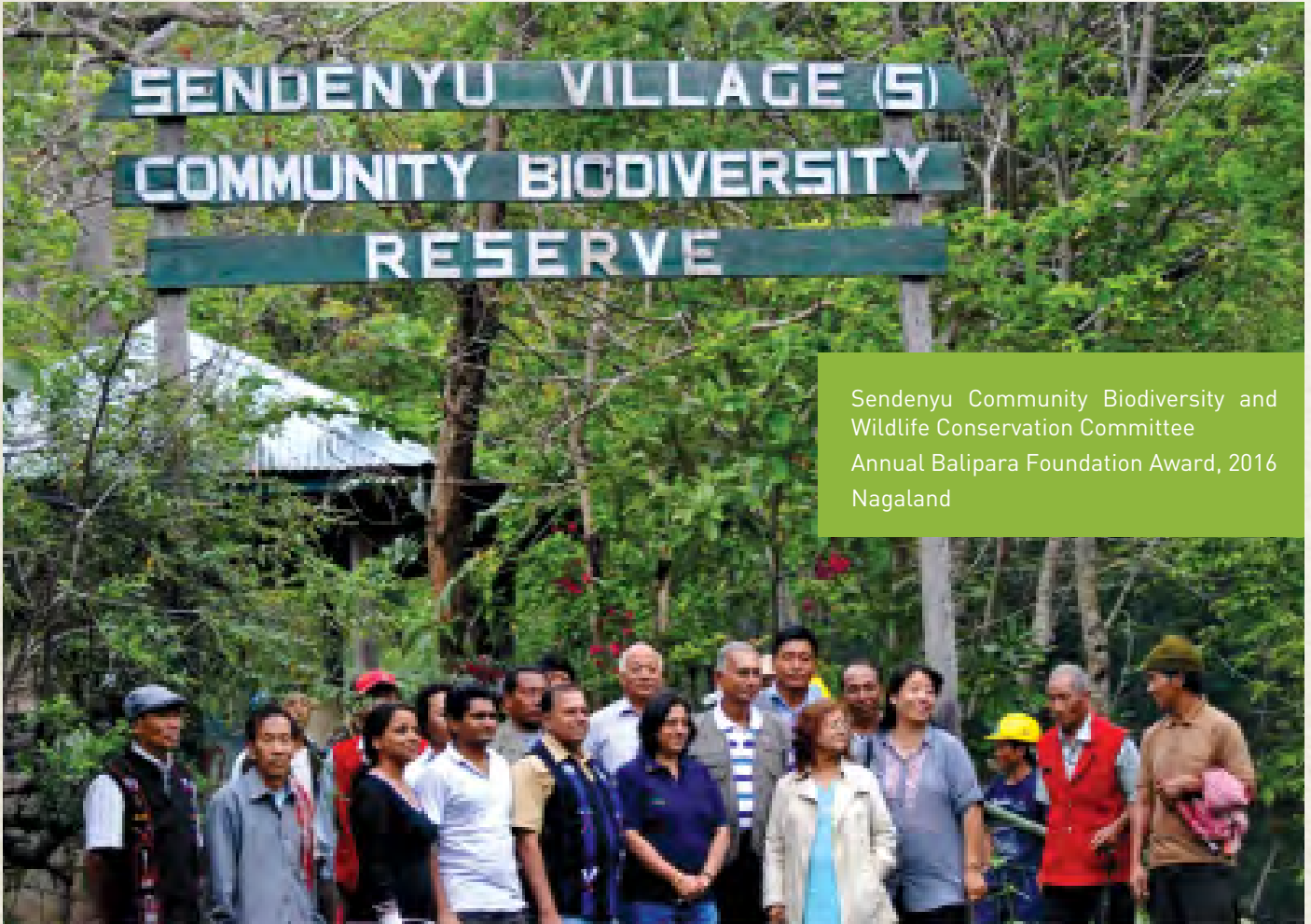




## Balipara Foundation Awards, 2016



# ANNUAL BALIPARA FOUNDATION AWARD, 2016



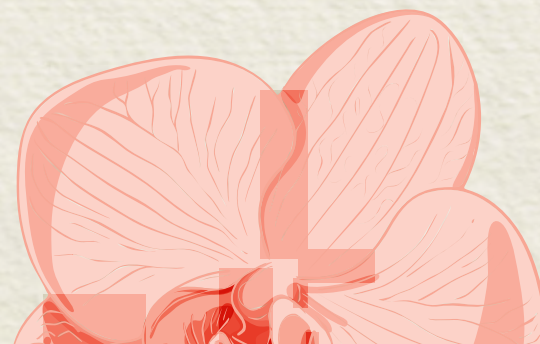
Visitors and the Sendenyu Community Biodiversity and Wildlife Conservation Committee members at the Sendenyu Village Community Biodiversity Reserve, Nagaland, India

Presented to a government or non- government organization, whose contribution to the protection of wild nature has gone beyond the call of duty and which has displayed demonstrable success in the arena of nature conservation.

## SENDENYU COMMUNITY BIODIVERSITY AND WILDLIFE CONSERVATION COMMITTEE

Since its inception in the year 2001, Sendenyu Community Biodiversity and Wildlife Conservation Committee have undertaken numerous steps to maintain the biodiversity and preservation of the Sendenyu forest. Alarmed by the rapidly disappearing floral and faunal populations within a span of a generation due to excessive hunting, logging and jhum cultivation, Sendenyu Community Biodiversity and Wildlife Conservation Committee felt the need

to take drastic steps to preserve and protect the biological diversity of the Sendenyu region. Conservation efforts and enforcement of rules in the village Protected Area and other community land have today resulted in the return of a diversity of mammals, birds, reptiles and amphibians that had once disappeared. Today, hunting is totally and indefinitely banned throughout their homeland.





## SOCIAL IMPACT:

In an effort to document the rich biological diversity heritage, all the major landscapes, rivulets, lake and ponds, natural spring source, flora and fauna including wild edible fruits, medicinal plants, timber of commercial value, different species of bamboos, etc, found within the land have been listed and are in the process of documentation.

## ECONOMIC IMPACT:

Various initiatives by the Sendenyu Community Biodiversity and Wildlife Conservation Committee stand for the sustainability of community conservation which thereby, depends on improving the economic livelihood of the community.

## ENVIRONMENTAL IMPACT:

In the past, the Sendenyu area has been home to various birds that are normally associated/ found in evergreen sub-tropical wet climatic conditions. However, most of the animals have become extinct due to excessive hunting, lack of their natural food due to encroachment of their habitat by humans. Following

enforcement of conservation in the Protected Area (PA) and other village community land, today, many animals have returned. For e.g. animals such as wild boars, barking deer, sambar, hog badgers, several packs of Indian wild dog, bears, leopards, macaques, flying fox, flying squirrel, civet, slow Loris, otter, etc. The area also has a host of amphibians and reptiles. Variety of bird species such as, barbets, different woodpeckers, partridges and quails, pheasants, doves, pigeons, owls, cuckoos, bulbuls, flycatchers, bush-robins, etc, are found in the area.

As part of long term plan strategy for sustainability of conservation, initially, farmers have been advised to do away with jhumming cultivation (slash and burn) and to adopt more scientific, productive and eco-friendly farming such as horticulture and wet terrace cultivation. As a result, more green coverage is maintained which led to increase in organic soil carbon content, other nutrients in the soil, moisture retention and reduction in soil erosion. Micro-check dams and water harvesting ponds have been dug in the PA to recharge underground water also to facilitate drinking water for wild animals.



Mr. Gwasinlo Thong, Chairman - Sendenyu Community Biodiversity & Wildlife Conservation Committee receiving the Annual Balipara Foundation Award, 2016 from Bittu Sahgal, Editor- Sanctuary Asia, Mumbai, India



# NATURENOMICS™ AWARD, 2016



Hong Village Community  
Naturenomics™ Award, 2016  
Ziro, Arunachal Pradesh

Vegetable garden at Siro (Hong)

Presented to a green entrepreneur whose financial and ecological success has proven to be sustainable in wealth formation through the securitization of natural assets such as food, water, energy and environment.

One of the few people in the world who continue to live in harmony with nature, Hong Village Community's methods of sustainable farming and social forestry is without a parallel anywhere in this world. Built on flat lands, the farms where the community practice wet rice cultivation along with pisciculture, is an epitome of efficiency. The village community even use the elevated partition bunds between rice plots to grow millets, which serve as water sheds for streamlets flowing down to irrigate the fields.



Piggery by Self Help Group from Hong



Aptani woman from Hong village on her way to the field





### SOCIAL IMPACT:

The eco- friendly environment in the village lets everyone spend family time with each other. The centre of the house where fire is lit right in the centre, family members and visitors sit to chat, watch TV, play music and simply spend time with one another.

### ENVIRONMENTAL IMPACT :

No farm animals or machines are used in Hong Village Community. Using nature- friendly and sustainable techniques alone, they have successfully conserved forests around the valley.

### ECONOMIC IMPACT:

Being primarily into farming, the Aptanis in the village are famous for sustainable and efficient methods that they have been following to cultivate rice.



Punyo Paya- Panchayat Head, Hong Village receiving the Naturenomics™ Award, 2016 from Rolf Von Bueren, Co- Founder Lotus Arts de Vivre, Thailand



# GREEN LEGAL AWARD, 2016



Rohit Choudhury  
Green Legal Award, 2016  
Assam

Presented to a lawyer or an organization which has used the courts to win justice for wildlife or for communities living in or around ecologically fragile wilderness.

Using a combination of Right to Information Act and litigation before the National Green Tribunal, Rohit Choudhury has highlighted several violations of law with respect to environmental issues in Assam before the courts over the past decade. He has been able to get significant decisions from the National Green Tribunal for protection of the Kaziranga National Park, Manas Tiger Reserve and surrounding areas by implementing No Development Zones, exposing illegal expansion of highways and large- scale deaths of wild animals and ensuring protective steps on the National Highway- 37 to minimise road kills.



Rohit Choudhury at Corbett National Park



Rohit Choudhury at Kaziranga National Park





### SOCIAL IMPACT:

Mr. Choudhury assisted communities across the country in filing RTI request before concerned authorities. He also assisted communities across the country in ensuring accountability and transparency in environmental governance.

### ECONOMIC IMPACT:

Mr. Choudhury's contribution does not have direct economic value, but it has helped in the conserving and restoration of multiple natural habitats that have supported the local and indigenous communities to sustain.

### ENVIRONMENTAL IMPACT:

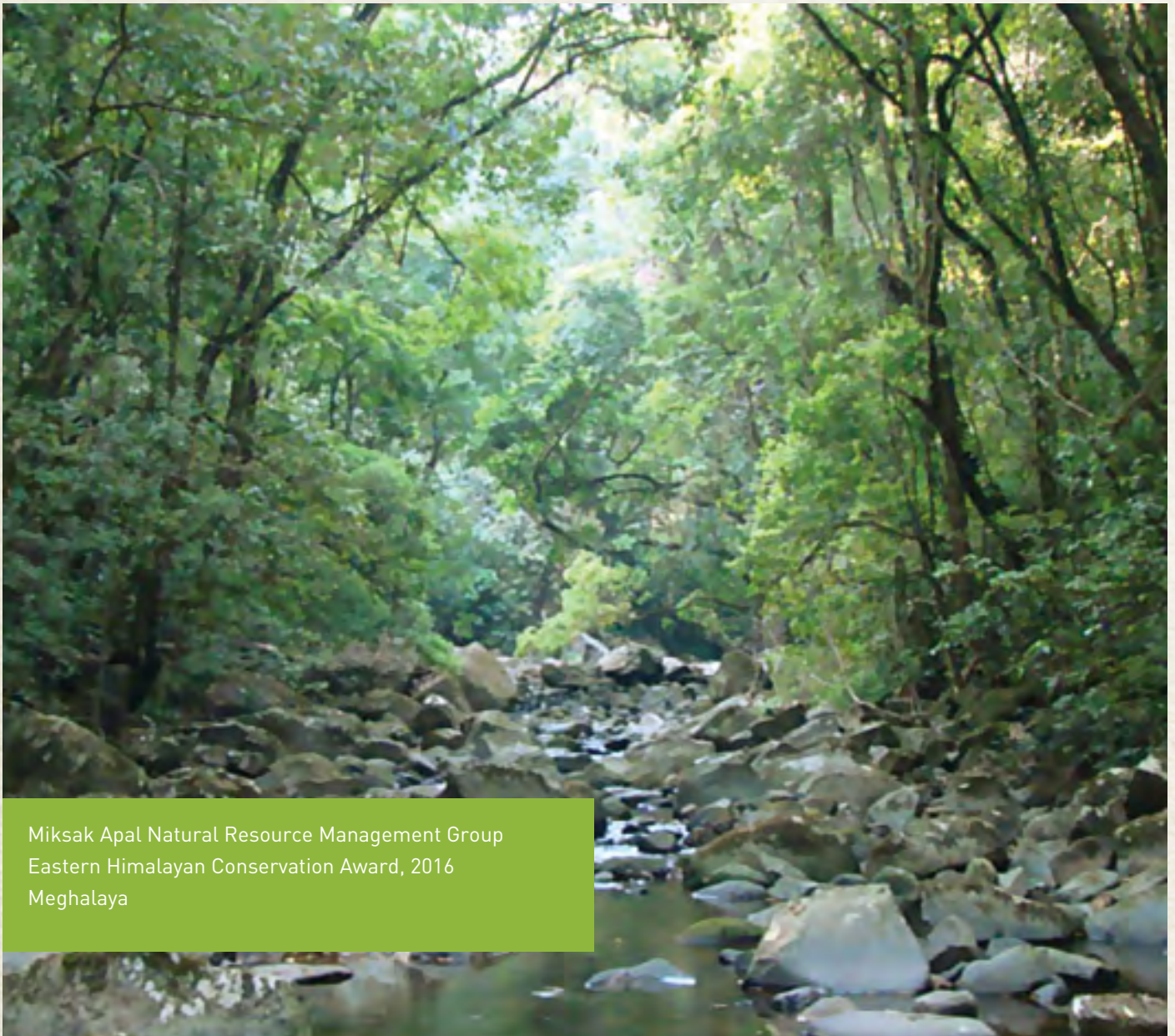
Rohit Choudhury has brought significant violations of law with respect to environment issues in Assam before the courts. Mr. Choudhury has also worked to stop polluting industries in No Development Zone around Kaziranga. As a researcher with the EIA Resource and Response Centre (ERC), which is a program of Legal Initiative of Forest & Environment (LIFE), his principal focus is to creatively use the provisions of the RTI Act and the National Green Tribunal in protecting areas of vital ecological concern.



Mr. Rohit Choudhury receiving the Green Legal Award, 2016 from Bruce Rich, lawyer, USA



# EASTERN HIMALAYAN CONSERVATION AWARD, 2016



Miksak Apal Natural Resource Management Group  
Eastern Himalayan Conservation Award, 2016  
Meghalaya

Miksak Apal Forest Reserve, Meghalaya

Presented to an individual, community or organization that has created significant impact in protecting the biodiversity in the Eastern Himalayas which millions of people depend on for their sustenance.

## MIKSAK APAL NATURAL RESOURCE MANAGEMENT GROUP

Formed in 2004- 2005, the Miksak Apal Natural Resource Management Group (NaRMG) trains the village community of Selbagre in natural resource, organisation and financial management with an emphasis on the restoration of the environment along with improvement of livelihoods. Under their aegis, community members have taken

over the conservation and management of the 35- hectare Selbalgre Village Reserve Forest. Because of the efforts of Miksak Apal Natural Resource Management Group, the community conserved forest is now also home to elephants, wild pigs, monkeys, deer, different species of birds and reptiles, and even the endangered Hoolock

gibbon. Tourists flock to the village from different parts of India to experience the serene beauty of Selbalgre.

They have proved that natural resources can be protected and conserved with the active participation of communities by making Selbalgre a model village for others to emulate.



### SOCIAL IMPACT:

Natural Resource Management group (NaRMG) and Self Help Groups (SHG) are formed in the village under NERCORMP / IFAD project in the year 2005 as a part of community institution building so as to start the developmental works in the village where community conserve area and biodiversity conservation was made important.

### ECONOMIC IMPACT:

The committee established a centre for cane and bamboo value added products, which makes different types of furniture and tools for daily use at home and agriculture field. Hence, the committee is contributing towards small income generation for the villagers.

### ENVIRONMENTAL IMPACT:

The village has also become a tourist attraction point for many people from different parts. One could feel the serene beauty, pleasant environment, the calmness and quietness while spending time inside the forest. Because of the conservation the forest, the village is now back with abundant of wild edible products, wildlife, many streams that acts as a continuous supply of water.

This community conserved forest is now also home to many wild animals like deer, elephant, monkeys, wild boar, and different varieties of birds, reptiles and rare species like the hoolock gibbons.



MiksakApal Natural Resource Management Group, Meghalaya receiving the Eastern Himalayan Conservation Award, 2016 from Szaritalaitphlang, Secretary and Spokesperson of Meghalaya State Congress and the Vice Chairperson Meghalaya Resource and Employment Generation Council (MREGC), India



# GREEN GURU AWARD, 2016



Presented to a 'green teacher' whose purpose in life is to inspire young people to respect, learn about and protect nature. The individual should have leadership qualities, including missionary zeal, passion and dedication so that others may seek to emulate his or her example.

A guardian for the Greater Adjutant Stork in Assam, Purnima Devi Barman has campaigned relentlessly for the conservation of this rare species, influenced public opinion and boosted the chances of their survival. As a child growing up near the Palababari and Deepor Beel wetlands, Ms. Barman wondered about these birds and later as an adult, she returned to Deepor Beel with Aaranyak, an NGO working on biodiversity conservation and wildlife. A deep connect with the land and people, and her steely determination to protect this scavenging bird that is an important link in the food web, saw her receive a Conservation Leadership Award in 2009. The training programme

that ensued in China was to be a turning point in Ms. Barman's life and the lives of hundreds of Greater Adjutant Storks that got a lease of life. Realising that conserving the 'hargila' is impossible without the cooperation of local folk who own the trees where it builds its nest; she along with other members of Aaranyak befriended each tree-owner family, who now actively participate in the rescue and rehabilitation of baby storks that fall from their nesting trees. The Dadara community is today an exemplary role model for community conservation and she has deservedly received the sobriquet of 'hargila baideu' or Stork Sister.



Purnima Devi Barman out in the field



## SOCIAL IMPACT:

Ms. Barman's relentless campaigns led to educating the villagers on the importance of the hargila in the ecosystem. The local weavers even started weaving motifs of the bird on their traditional towel- cloth, the gamocha. With her initiatives, fourteen dedicated women groups (hargila army) were formed in the villages.

## ECONOMIC IMPACT:

With the formation of the hargila army and the various activities performed by the group such as traditional cooking competition, crafts making competition, weaving etc. have led towards economic upliftment of the women groups through small income generation. 14 women self-help groups formed and receive and execute Government funded / aided schemes for protecting the endangered bird in their backyards.

## ENVIRONMENTAL IMPACT:

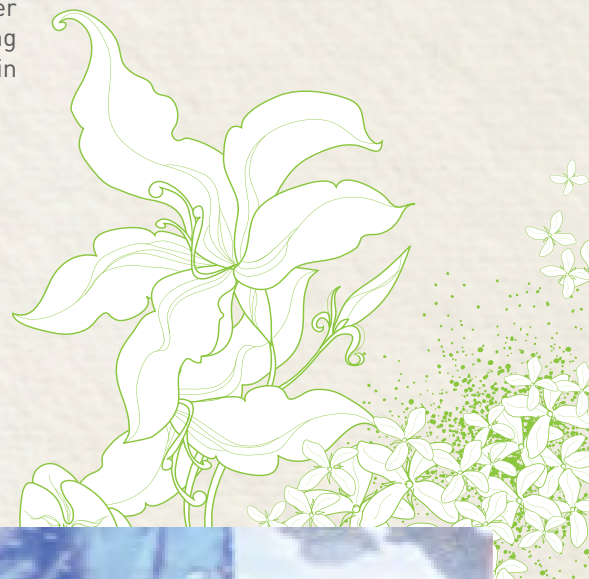
Her impassioned campaign has influenced public opinion and boosted the chances of the survival of this rare species. From 28 nests in 12 trees in Dadara in 2006 to 171 nests in 55 trees in 2014, Ms. Barman's story and that of the storks is so much more than just a local legend. She is influential in 'creating' the biggest Large Adjutant breeding colony in the world with her initiative, a procedure for rescuing nest fall bird has been established in collaboration with Assam State Zoo.

## ACHIEVEMENTS

2009 - Conservation Leadership Program Award

2014 - Completed International field training on nesting monitoring and biology of the stork at the Prek Toal Bird Sanctuary, Cambodia

2016 - Conservation of Threatened Species, Indian Biodiversity Awards



Purnima Devi Barman receiving the Green Guru Award, 2016 from Nellie Ahmed, founder- Maria's Public School, Assam, India



# YOUNG NATURALIST AWARD, 2016



Presented to a young boy/girl (age 15 to 25) whose life has been dedicated to the protection of nature. These individuals are agents of change and thought leaders of tomorrow.



Utility baskets made out of plastic packets (Kurkure, Uncle Chips, Wai Wai, Maggi, Lays)

A writer and green activist, the seeds of Mr. Sandeep Gurung's green consciousness were in many ways laid down by his parents. Mr. Gurung runs Oh My India (OMI), a social group that creates awareness on the importance of reducing, reusing and recycling domestic waste, which has inspired thousands of individuals to change their lifestyles. He carved a niche for himself

in the fashion world at a young age and is the owner of Green Gangtok – the first- of-its-kind eco- friendly fashion boutique in Sikkim. Mr. Gurung's work has been featured in many leading newspapers of India and he actively writes on fashion and lifestyle topics for leading dailies in India and international journals. He has previously worked as a fashion editor for a publication in

Bengaluru, and at present works as a special correspondent and columnist in Sikkim. Mr. Gurung's writing reflects his love and care for the environment and his attempt to promote sustainable consumption among urban consumers is the need of the hour.



## SOCIAL IMPACT:

Mr. Gurung has worked with various governmental and non- governmental organizations to advocate the art of recycled products made out of household waste. He has showcased his art works in several events to educate the public and specially the school students on concept of 3 R's (reduce, reuse and recycle). Some of them are:

- OUT OF WASTE exhibition, Banshankari, Bangalore during The Joy of Giving Festival, India in 2009 and 2010. The Joy of Giving Week is India's annual festival of giving celebrated in the week of Gandhi Jayanti (Oct 2nd).
- Exhibition on Re-cycled waste 2014 held at Titanic Park, Gangtok organized by Rural Mangement Development, Government of Sikkim as a part of Swaach Bharat Abhiyan, Government of India.
- Exhibition on Zero Waste during Jorethang Maghey Mela 2015 in collaboration with World Wide Fund for Nature (WWF), Sikkim.

- Educating government school students on 'Clean Hands' and hygiene by distributing natural handmade soap and liquid hand wash as a part of LOVE 2015- an independent project by Green Gangtok.
- Let's Recycle – Summer Workshop 2015 for school students in Sikkim organized by Green Gangtok Boutique.

Omi being an animal lover has been a voice for street animals and has helped in rescue and rehabilitation of several street dogs in Bangalore and Sikkim via organisations like PETA India, CUPA, PFA and SARAH.

## ECONOMIC IMPACT:

Green Gangtok provides a platform to independent artisans, designers, NGO's and SHG's to showcase and sell their products. Worked with award winning brands like Haathi Chaap (New Delhi), Neev Herbals (Jamshedpur), Indie Eco Candles (Mumbai), Workshop Q (Jaipur),

I wear Me (Mumbai), Green the Gap (New Delhi) and many more. Worked in collaboration with women artisans from North East for his design collections, thereby empowering women of the region. Omi- the brand believes in fair-trade. This means that everybody involved in the manufacturing process i.e. farmers, skilled workers, designers, retailers gets a fair deal for their efforts. Conducted several workshops, seminars and exhibitions on creating "Cash Out of Trash"- making utility products out of household waste.

## ENVIRONMENTAL IMPACT:

Products created or retail are mostly handmade, natural and animal friendly. They are free from child labour, toxic dyes and fair trade. Resources used are mostly household wastes to create gift items like travel bags, photo frames, stationery holders and wall decors. Their products are not just a commodity; it's a vision that values the harmony of man and nature at its core. They believe GREEN is a verb!



Sandeep Gurung receiving the Young Naturalist Award, 2016 from Armstrong Pame, IAS, Nagaland, India



# FOOD FOR THE FUTURE AWARD, 2016



Robin Naiding  
Food For the Future Award, 2016  
Assam

Presented to a visionary individual, who might be a scientist, NGO, villager or entrepreneur who has made a significant contribution to the promotion of organic food, or has demonstrated alternative farming methods that increase yields using ecological principles that have brought about replicable change.



Belonging to the Dimasa Tribe of Bagadima village, Robin Naiding a 41-year old farmer, hails from a poor family with seven of his children. Realizing the importance of Natural Resource Management, he encouraged and sensitized the whole village community of Bagadima (comprising of 42 households) to create less pressure on the forest cover and make the best use of land and its resources in a sustainable manner (participatory land use planning).

During his initial phases, he took a loan of two thousand rupees from the Biate Cultural Organization under the Natural Resource Management Group (NaRMG) to invest on growing horticulture crops in his one-acre land. Using sustainable

agricultural practices, he was able to gain proportionally larger profits, which also aided soil and water conservation.

He promoted various horticulture crops like Litchi, Mango, Banana, Parkia, etc in his village with organic management of soil fertility and also used cover crops to reduce weeds growth and soil erosion. With the leadership of Mr Naiding, the community has planted various forestry species (700 nos. annually) in fallow land, water catchment area and community conserved area (CCA) framing rule and regulation and has also sensitized the community on the importance of benefit sharing mechanism (NTFP). Mr. Naiding has indeed enabled the community to change the mind set towards the importance of environment protection





Litchi Garden

and climate change and its mitigation.

Robin Naiding is a living example of how to change the mindset of a community towards the importance of environment protection and climate change mitigation.

### **SOCIAL IMPACT:**

The initiative taken by Mr. Naiding, led the villagers to receive Indira Awaas Yojana Schemes for 12 households, job cards for 40 households and old age pension schemes for 8 villagers. Through his initiative, every household in his village was able to grow litchi, mango, parkia and other organic foods with the help of kitchen gardening practices. He also helped in creating awareness among villagers about the ill-effects of deforestation.

### **ECONOMIC IMPACT:**

Mr. Naiding encouraged the villagers to grow foods like parkia, mango and litchi that were of high demand in the market. Through his help, villagers also took initiative in horticulture farming.

### **ENVIRONMENTAL IMPACT:**

Robin Naiding planted various native tree saplings within the village and he helped distribute around 500 saplings to other villagers and nearby areas. He encourages sustainable farming practices among villagers

and farmers. He and members of the village took up the initiative to plant 700 saplings every year in Bagadima Village. His contribution also aided in increasing reach and demand of horticulture markets.



Robin Naiding receiving the Food for the Future Award, 2016 from Rolf Von Bueren, Co- Founder Lotus Arts de Vivre, Thailand



# NATURE CONSERVANCY AWARD, 2016



Deben Bora  
Nature Conservancy Award 2016,  
Assam

Deben Bora and his team member on field

Presented to an individual, community or organization who has influenced and helped restore a parcel of non-forested or deforested land to a biodiversity-rich forest for posterity.

After joining the Jakhalabandha Police Station as the officer-in-charge in 2014, Deben Bora has been on a single-minded mission to thwart rhino poaching attempts in the Kaziranga National Park. Realising that the Burapahar and Bagari range were poaching hotspots, Mr. Bora developed effective mitigation measures relying on his past

experience. It was under his leadership that the Assam police conducted search operations in Manipur and Nagaland for the first time, sending a stern message to poachers that these places were no longer safe havens for them.

To prevent rhino poaching, based on his past experience, Mr. Bora applied two strategies: Offensive and Defensive. His

defensive strategy included organizing wildlife protection and awareness meetings at rhino-poaching dominated areas like Amguri, Rangajan, Upordanga, Burhapahar, Naharubasti, Kanchanjuri, and Thankurgaon. He also deployed armed personnel at national highways to monitor rhino poachers who were traveling from



Manipur or Dimapur were and trying to enter Kaziranga National Park. He also strengthened highway patrolling by setting up village defence parties in multiple areas including Killing Gaon, Bordolong, Rangaloo, Ganjubasti, Amguri Chang and Phulaguri. His offensive strategy involved investigating and researching on information of poacher's residences and hideouts that helped him raid poachers for use of ammunition or arms. And through these operations, he was able to capture 140 rhino poachers and seize several rifles and other ammunition supplies.

Mr. Bora has gone beyond his line of duty time and again because he firmly believes that the coming generations should be able to see the one-horned rhino in flesh and blood, rather than in museums or books of extinct species.

### SOCIAL IMPACT:

Deben Bora organized awareness meetings in multiple rhino-poaching dominated areas on the importance of protection of Rhinos. He also strengthened highway patrolling of wildlife trade and poaching to reduce rhinos from being killed in Kaziranga National Park.

### ENVIRONMENTAL IMPACT:

Mr. Bora continues to play a major role in conservation of one-horned rhinos in Kaziranga National Park. He also facilitated in organizing village defence parties in rhino poaching areas in Assam.

### AWARDS AND ACHIEVEMENTS:

2016 – Wildlife NGO Aaranyak felicitated Deben Bora and the team of Jakhalabandha Police Station for their committed efforts in arresting rhino poachers.





# SPECIAL CATEGORY – RANGERS OF THE EASTERN HIMALAYAS AWARD, 2016



Jayashree Naiding, IFS, ACF  
Rangers of the Eastern  
Himalayas Award, 2016  
Assam

Presented to the Staff of Forest Departments for their exemplary service towards the protection of Fauna and Flora in National Parks and Reserve Forests of the Eastern Himalayas

Jayashree Naiding is an Assistant Conservator of Forests in Kaziranga National Park. When a male rhino strayed into Tezpur town from Kaziranga National Park on June 26, 2016, it was under the leadership of Jayashree that it was driven back safely into the park. She led the staff and followed the rhino from Digali Chapori, Sri Lanka Tapu and then back to Kaziranga. The following day when another rhino strayed into the Sootea area of Bebejia village, she showed exemplary spirit of leadership in coordinating with the police, CRPF, civil administration and NGOs to tranquilise the animal and taking it to the Guwahati State Zoo. Ms. Jayashree Naiding recently successfully investigated and arrested the seven accused in rhino poaching case reported from Sootea. Ms. Jayashree has been recognized by Balipara Foundation for her timely efforts towards carefully handling human-rhino interactions.



Jayashree Naiding, IFS, ACF receiving the Rangers of the Forest Award, 2016  
from Smt. Mala Ramadorai, Indian Classical Musician, Mumbai, India





Jigme Dorji  
Rangers of the Eastern  
Himalayas Award, 2016  
Bhutan

Presented to the Staff of Forest Departments for their exemplary service towards the protection of Fauna and Flora in National Parks and Reserve Forests of the Eastern Himalayas

In a career spanning the last 20 years, Jigme Dorji joined the Bhutan Forest Service Department as a Range Officer and now serves as Head for Communities, Recreation and Development Section, Park Headquarter, Royal Manas National Park. Apart from carrying his official activities in an impeccable manner, Mr. Dorji has made a mark as a forest officer for working closely with the local communities and has also advocated for science-based conservation research and action. His seminal work on conservation of the critically endangered White-bellied Heron (*Ardea insignis*) and ecotourism initiatives have given him much appreciation from his peers, seniors and civil society in his home country. Jigme Dorji is truly a champion for trans-boundary cooperation in the Eastern Himalayas.

#### SOCIAL IMPACT:

Jigme Dorji was involved in the planning and implementation of donor-funded conservation projects for the parks and for also liaising with the stakeholders. His work also included carrying out field surveys, data collection drives, reporting of mammals and birds along with the assessment of habitat. He also

assists park management in reporting of work progress of government funded activities. Jigme Dorji marketed and promoted ecotourism within the park through increasing awareness through the medium of education and outreach. He was also the focal person for some of the park management programs like PlaMS and SMART Program, as well as for the WWF-Bhutan supported TraMCA Projects.



Jigme Dorji on duty along with the team





Jigme Dorji raising awareness amongst the local community

### ECONOMIC IMPACT:

Jigme Dorji initiated a community conservation-based project on White-bellied Heron (supported by Ruffords Foundation and RSPN – Royal Society for Protection of Nature) to increase awareness and benefit the local community while also taking steps towards conserving the bird. Other than that Mr. Dorji was crucial in implementing the first ever ecotourism initiative in Royal Manas National Park, when it was open to general public and visitors. The ecotourism opportunity in RMNP has improved the livelihoods of the local communities and benefitted more than 500 park residents with an alternative livelihood support.

### ENVIRONMENTAL IMPACT:

Jigme Dorji has contributed significantly to our knowledge of community based conservation initiatives, especially with reference to protecting critically endangered species such as the White-bellied Heron. The White-bellied Heron is classified as critically endangered by IUCN on the ground of its small and rapidly declining population (last population estimate revealed that only 28 herons remain in Bhutan). This decline is projected to increase in the near future as a result of the loss and degradation of lowland forests and wetlands, and through direct exploitation and disturbance of its habitat. The population of this heron is placed in the band of 50

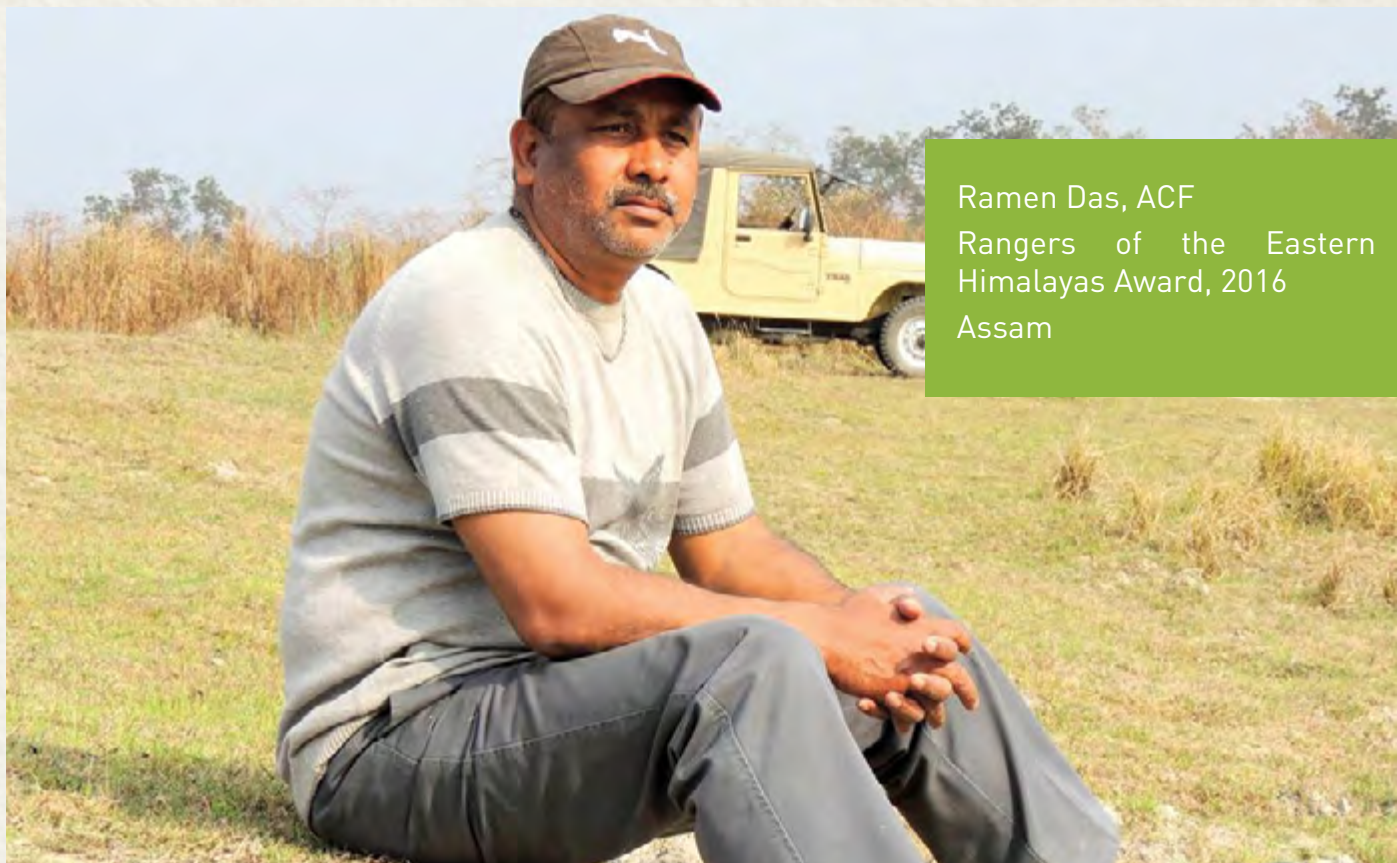
to 249 in the IUCN factsheets but it is anticipated to be much less than the projected number. Though it occurs across Eastern Himalayan Foothills, this heron species is not native to any country across its entire home range. In Bhutan, this heron species occur in two major river system; Punatsangchhu and Mangdechhu Rivers. The population assessment conducted from 2003 to 2010 showed gradual increase in number of individuals from 14 to 26. However, mega hydropower projects currently under construction in Punatsangchhu basins where the major population occurred in the past have altered its habitat. With no assessment conducted until recently, it remained unsure where and how far those populations were displaced due to disturbances. Jigme Dorji through his two year study on the White bellied Heron assessed the population across its entire habitat in Bhutan in two seasons (winter and monsoon).

His studies combined with efforts from Civil Societies such as RSPN (Royal Society for Protection of Nature) resulted in the upgradation of the species into Schedule I of Forests and Nature Conservation Act of Bhutan. The study documented the current status of the species and their potential habitats that extended to other unknown areas in Bhutan as well as India. Conservation awareness materials such as Posters, documentaries and pamphlets were also produced that helped in garnering public support for the species



Jigme Dorji receiving the Rangers of the Forest Award, 2016 from Indo Fusion Violinist and Vocalist, Ms. Sunita Khaund Bhuyan from Assam, India





Ramen Das, ACF  
Rangers of the Eastern  
Himalayas Award, 2016  
Assam

Presented to the Staff of Forest Departments for their exemplary service towards the protection of Fauna and Flora in National Parks and Reserve Forests of the Eastern Himalayas.

Ramen Das is the longest-serving officer in Kaziranga National Park. When he served as the Range Officer Western Range, Bagori, it was because of his information network and intelligence base that several rhino poachers could be arrested. He recently led his team to Conoor in Tamil Nadu, arrested two accused in the poaching of a female rhino and her calf in Western Range Bagori and produced them before the Sub Divisional Judicial Magistrate, Kaliabor.

#### ENVIRONMENTAL IMPACT:

Many Rhino poachers were arrested because of Mr. Das' strong information network and intelligence base. His initiatives strongly stands for preserving our ecosystem by saving the rhinos and other natural habitat.

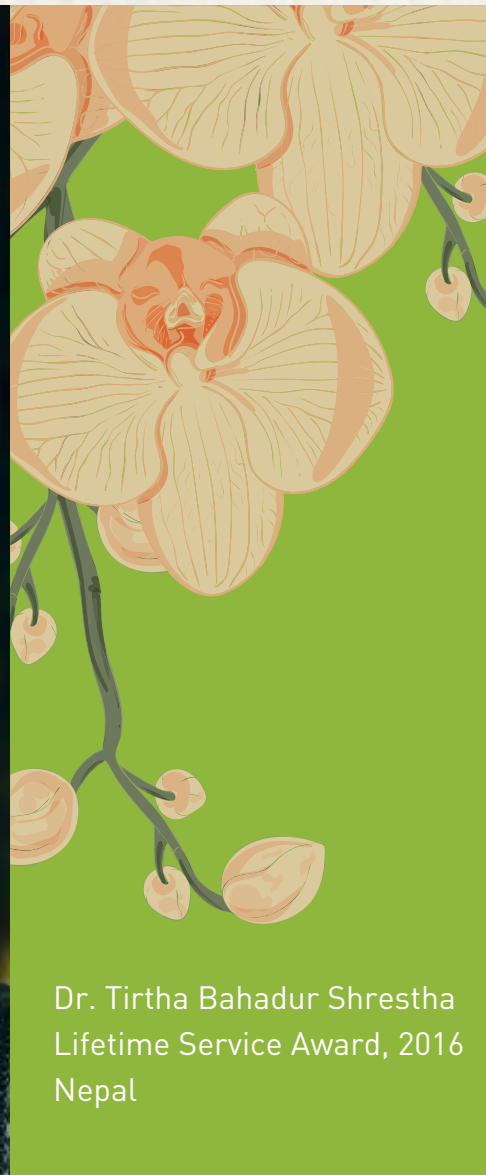
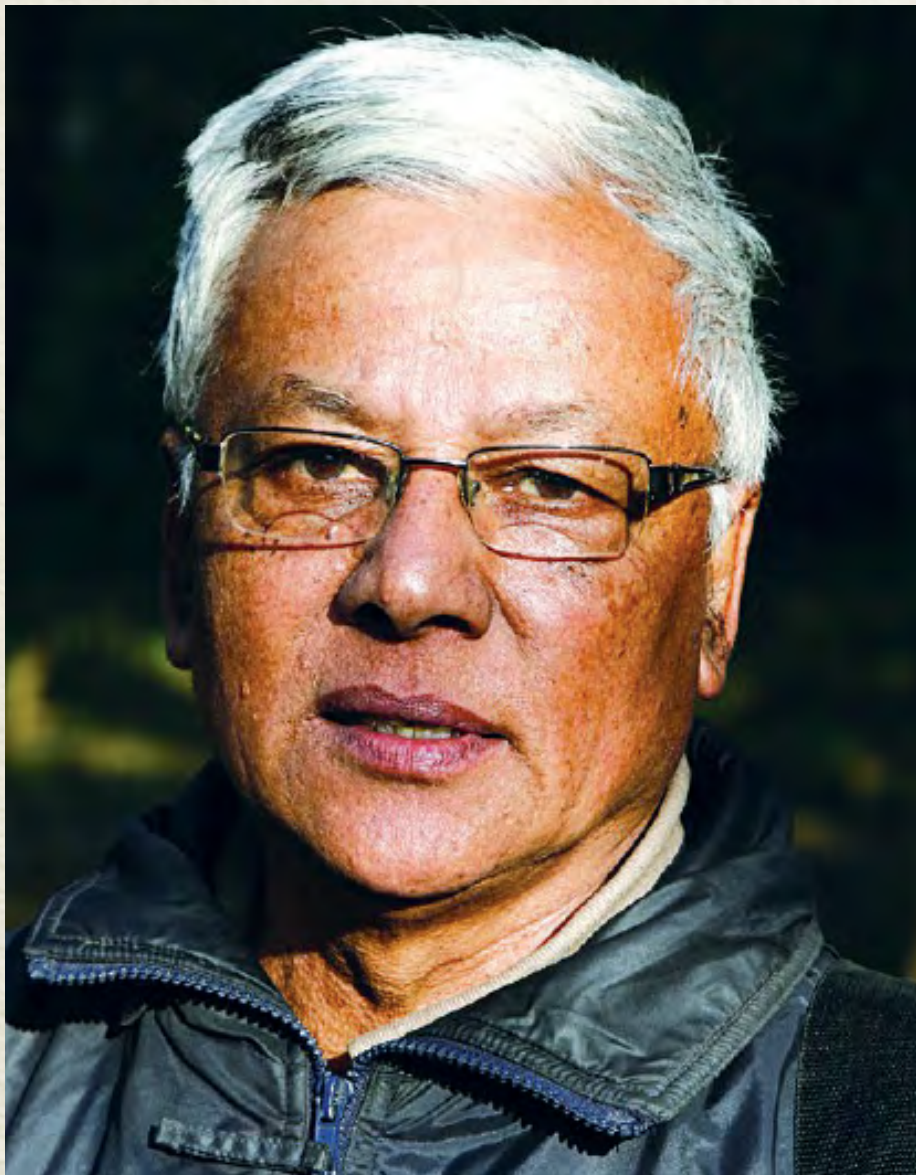


Ramen Das, ACF receiving the Rangers of the Forest Award, 2016 from Shri Bishan Singh Bonal, Assistant Director of Tiger Conservation with the Ministry of Environment & Forests, Government of India





# LIFETIME SERVICE AWARD, 2016



Dr. Tirtha Bahadur Shrestha  
Lifetime Service Award, 2016  
Nepal

Presented to an individual whose life has been devoted to the ecological welfare of the people of the Eastern Himalayas, and whose philosophy and purpose has been guided by the need to protect, restore and care for nature.

A leading authority on Nepal's biodiversity and taxonomic classification, Dr. Tirtha Bahadur Shrestha has devoted his entire life to the conservation of biological diversity and ecosystems in the Eastern Himalaya. The foremost botanist and a hero of environmental conservation of endemic plant species in Nepal, Dr. Shrestha served as the team leader for the creation of Makalu-Barun National Park and has helped to classify major forests in the country throughout his career. As the author of Nepal's Country Report on Biodiversity, Dr. Shrestha has

conducted the classification of rare and endangered taxa across the country. Not only that, he has authored more than 20 books, and hundreds of articles, containing new discoveries, concepts and ideas that have helped mainstream conservation through education and journalism. His management plans identified indigenous wisdom to be necessary to create locally-viable solutions for Nepal's national parks were way ahead of its time.

Dr. Shrestha was also the coordinator of Nepal's National Heritage Programme in the International Union for the

Conservation of Nature and Natural Resources (IUCN). He spent a decade as the Member Secretary at the Royal Nepal Academy. Besides teaching at high schools for a while, Dr. Shrestha also joined the Department of Medical Plants at Amrit Science College. He also contributed towards the making of Nepal's initial vegetation maps.

Early in his career, Dr. Shrestha intensively explored Nepal and its collection of medicinal and aromatic herbs, where he was in the pursuit to discover and collect rare, endemic and threatened plants to create an inventory





Dr. Tirtha Bahadur Shrestha (left) along with other cultural experts on a book release function in Kathmandu

of medicinal herbs of the Himalayas. He engaged in plant collection in all 75 districts in Nepal. He has advocated for classification of lichen, mosses and fungi, and helped classify most of the country's angiosperms.

Dr. Shrestha earned his Ph.D from Grenoble and his doctoral work involved studying the 'Ecology and Vegetation of North-west Nepal'. He is the author of numerous books and articles including 'Gymnosperms of Nepal,' 'Classification of Nepalese forests and their Distribution in Protected Areas,' 'Himalayan Flowers and Trees.' He has been a vocal critic of animal sacrifice. Inspired by Poet Bhupi Sherchan and how 'literature' can be used as a useful tool, Dr. Shrestha authored a book called 'A Hundred Questions in Science', aimed at addressing children's questions and also to attempt integrating science with literature and culture. During his learning years, he had come to realize how important it was for scientists and non-scientists to communicate and collaborate, as it was the best approach to changing mindsets and sensitizing the community towards the environment. He is the author of numerous ground-breaking, comprehensive publications on Nepal, which took years of study to formulate, including studies on rare and endemic species and classification of forest types in the Eastern Himalayas.

#### SOCIAL IMPACT:

Dr. Shrestha is the author of numerous books and articles including 'Gymnosperms of Nepal,' 'Classification of Nepalese forests and their Distribution in Protected Areas' and 'Himalayan Flowers and Trees'. Dr. Shrestha has contributed immensely towards educating the mass about the importance of the biodiversity-rich Eastern Himalayas.

#### ENVIRONMENTAL IMPACT:

Dr. Shrestha has helped classify major forests in the country throughout his career. He also engaged in plant collection in all 75 districts in Nepal. He has advocated for study and classification of lichens, mosses and fungi, and helped in classification of most of the country's angiosperms.



Dr. Tirtha Bahadur Shrestha, Life Member- Nepal Academy Kamaladi, Kathmandu



# 4th RABINDRANATH BARTHAKUR MEMORIAL LECTURE, 2016

A unique confluence of music, song & recital by Shri. Pandit Hariprasad Chaurasia, Shri. S. Ramadorai & Smt. Mala Ramadorai.

## NATURE, MUSIC, AND TECHNOLOGY

Shri. S. Ramadorai

Homo Faber may not be the only maker in nature. We know, for a fact, that elephants and rhinos, both denizens of the Brahmaputra valley, are active ecosystem engineers. The rhinoceros is among the most ancient of mammals, pre-dating man by about a million years. Both these magnificent animals intuitively know how to tap into the seasons and forces of nature. As the riverine landscape changes with each season and each year, the rhino builds and refashions the landscape to further its survival. For example, through force of habit, or maybe discipline, the dughills of the rhino become the nuclei for landscape engineering through selective regeneration of grasses, shrubs, and trees.

Music of Nature:

So, indeed, if one had to talk, about the place of technology in nature, one would be well advised to approach it with humility and in silence. And to do so in conjunction with music adds altogether another dimension. Music and language are, in fact, shared more widely among the denizens of the forest than we might like to acknowledge.

Many animals have capabilities entirely different from our limited six senses. Bats sense the world around them through reflected sound, (as do whales) and for these creatures, music is way of being and seeing.

But man the maker in his insatiable greed for objects has transformed nature, perhaps irretrievably so. Globalization has increased trade, oceangoing traffic has surged: making the oceans a terribly noisy and confusing place for the whales. However, technology enables us to acquire capabilities akin to a bat or a bee. Some of the new semiautonomous cars sense the cityscape using SONAR like bats, while other use LIDAR to render a 3-dimensional model of a machine readable world. Many animals see well in the dark. New technology enables us to see with Infrared cameras. Infact, we put one such camera on a drone to spot animals and poachers here in Assam.

Many of our gods play music, and the celestial Gandharvas were musical specialists. Krishna's flute enchanted the wild animals in the forest such that the hunter and hunted would all be lost in the music, muraliganam. That is it!

When the hunter and the hunted become at one, silence reigns, even in



Shri. S. Ramadorai, Business Leader & Technologist, Mumbai, India



Smt. Mala Ramadorai, Hindustani Classical Vocalist, Mumbai, India



Pt. Hariprasad Chaurasia, Classical Flutist, Mumbai, India

nature. And for us in the Indic tradition, the goal of all human endeavours is to experience the One-ness. Music, math, technology, and nature, all lead us to the One.

The Bamboo Song - Celestial Sounds of Nature

Nature is supreme; the first music is born when the winds whistled through bamboo. The Indian bamboo flute is a celestial sound of nature. It is intriguing to know that the bamboo flute Pt. Hariprasad Chaurasia plays his music through is 65 years old and is from the rich biodiversity of Assam. There is inspiration in music and in nature for mankind.



# EASTERN HIMALAYAN NATURENOMICS™ CONSERVANCIES

## Pakke Tiger Reserve and Interpretation Centre

Located at the foothills of the East Kameng district of Arunachal Pradesh, Pakke Tiger Reserve is a 862 km<sup>2</sup> Protected Area, notably known for its award winning 'Hornbill Nest Adoption Programme'. Pakke Tiger Reserve falls under a long contiguous stretch of rich forests, remaining parts of which comprise of Nameri National Park, Papum Reserve Forest, Diomara Reserve Forest and Eaglenest Wildlife Sanctuary. And due to its geography, the reserve faces persistent problems such as border disputes, poaching, hunting and extraction of natural resources. But exceeding efforts to promote ecotourism within the reserve, channelled with the overall support of the local community, is helping in reducing the direct dependence of local communities on the forests. Pakke also largely owes its success in conserving its hornbills to Aparajita Datta, Tana Tapi, Takam Nabam and the Ghora Aabhe Society, all of whom are past recipients of the Balipara Foundation Awards. They have worked relentlessly in communicating and convincing local communities to reduce hunting hornbills and wildlife for traditional and cultural practices. They were also instrumental in introducing the 'Hornbill Nest Adoption Programme' in Arunachal Pradesh. Pakke Tiger Reserve is home to four



Pakke Tiger Reserve

species: Great Hornbill (*Buceros bicornis*), Wreathed Hornbill (*Rhyticeros undulatus*), Oriental Pied Hornbill (*Anthracoceros albirostris*) and Rufous-necked Hornbill (*Aceros nipalensis*). The Pakke Paga Festival is a way to appreciate the communities that continue to contribute towards protecting the hornbills, wildlife and forests in and around Pakke Tiger Reserve. This year the festival was held from 16th to 18th January, 2017 at Seijosa in Arunachal Pradesh with collaborative efforts from multiple organizations including, Balipara Foundation, WWF-India, Wildlife Trust of India, Wildlife Conservation Trust, Sanctuary Nature Foundation and Nature Conservation Foundation.

Audience for the event comprised of Indian and International Conservationists, along with a variety of local communities. Highlights of the

three day event include the team from Wildlife Trust of India trading old wild fur-based material from community members and replacing them with new synthetic fur. The team from Nature Conservation Foundation also continued their long-run initiative of trading real traditional hornbill-beak headgear and replacing them with the artificial ones crafted by them. There were other similar initiatives and awareness campaigns as well that conveyed the common agenda of discouraging communities from hunting and killing local wildlife. Following the cultural programme of the festival, participants were taken to a tour of the Pakke Nature Interpretation Center and a visit inside the Tiger Reserve.

The Pakke Paga Festival is a way to appreciate the communities that continue to contribute towards protecting the hornbills, wildlife and forests in and around Pakke Tiger Reserve.



At Pakke Paga Festival

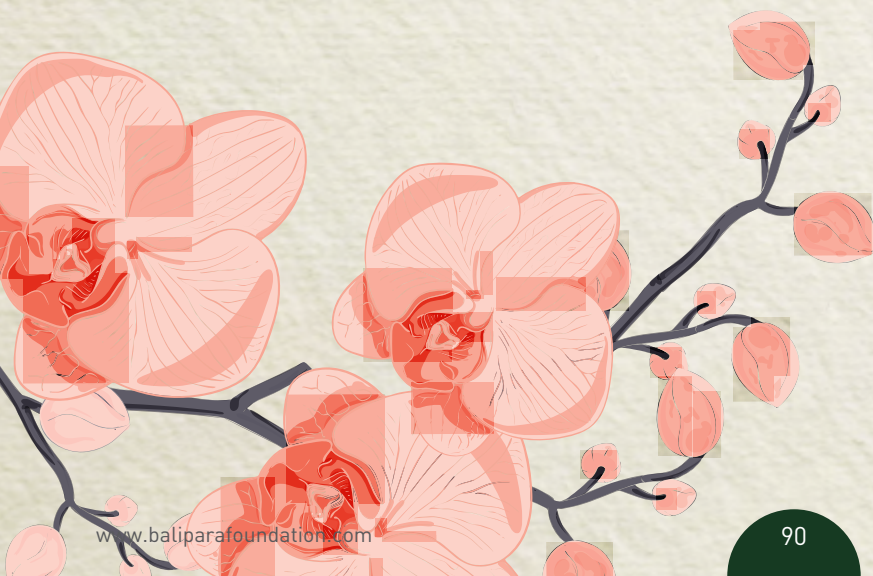




Field visit to Pakke Tiger Reserve

- **The Pakke Nature Interpretation Center**

- Acts as an interactive learning experience for visitors, giving them a glimpse of the biodiversity of the Reserve.
- Filled with interactive posters, infographics, illustrations and interactive displays that demonstrate various aspects such as the spin wheel style chart depicting the various plants found in the park along with their flowering and seeding seasons and the push button boards which emits sounds of the various vocalizations of the animals and birds.
- Wildlife tourists are given an introductory session at the interpretation center educating them about the reserve's history, highlights and anthropogenic hindrances.
- At Pakke Tiger Reserve, Wildlife Trust of India (WTI) also runs the Centre for Bear Rehabilitation and Conservation Centre where orphaned black bear cubs are treated, nourished and released back in the wild.





## Hathi Pahar Conservancy



Hathi Pahar Conservancy Site

Hathi Pahar Conservancy is an ecologically important natural and forested habitat, protected by Difloo Tea Estate since the past 4 years. The vegetation of Hathi Pahar Conservancy comprises of a mixture of endemic and native herbs, shrubs, climbers, trees, including a few species that are considered 'sacred' in this region. Hathi Pahar Conservancy is a part of the Eastern Himalayan Naturenomics™ Conservancies, creating and promoting avenues that reaches out to communities on the importance of this biodiverse ecoregion.

Hathi Pahar Conservancy is frequented by Asian Elephants throughout the day, and is also considered an important corridor and passage for wildlife to adjoining forested areas. The site is located besides Difloo River that originates in the Karbi-Anglong hills. Hathi Pahar Conservancy is home to diverse wildlife species, including arthropods, amphibians, reptiles, birds and mammals of the Eastern Himalayas.



At Difloo Tea Estate

Till date, there have been 50+ species of plants identified in Hathi Pahar Conservancy, including Gowla and Munda which are considered significantly important species among Odiya communities.



Melastoma malabathrium L.  
(Blue tongue)







### Some of the Species identified at Hathi Pahar Conservancy

Botanical Name	Local Name	English Name	Family
<i>Achyranthes aspera</i> L.	Ubhot kata	Prickly chaff-flower	Amaranthaceae
<i>Dillenia indica</i> L.	Ou tenga	Elephant apple	Dilleniaceae
<i>Flacourtia cataphracta</i> Roxb.	Ponial	Indian cherry	Flacourtiaceae
<i>Macaranga denticulata</i> (Bl.) Muell. -Arg.	Jogoru/Jagru	Mildew mahang	Euphorbiaceae
<i>Spilanthes paniculata</i> DC.	Mahabhiringraj	Pellitary	Asteraceae

A botanical trail, knowledge interpretation center and watch tower are under process of being created at Hathi Pahar Conservancy, with minimal alterations to

the existing natural environment, to give individuals a glimpse and understanding of the unique floral and faunal diversity that is in store. We envision Hathi

Pahar Conservancy in being a role model for ecotourism and biodiversity conservation of the Eastern Himalayas.



A view of the botanical trail at Hathi Pahar Conservancy



# KNOWLEDGE PUBLICATIONS

## Hidden Treasures : Rare Plants of the Alpine Himalaya

By Naresh Swami

"This book is dedicated to all the men in uniform safeguarding the high altitude mountainous borders of this great nation."



The opening page of Naresh Swami's book opens with a dedication to the men of our nation who deserve the highest accord and are the real heroes who protect the natural treasures of our world.

Naresh Swami was born into an aristocratic Brahmin family in the year 1980. Following the tradition of family priesthood responsibilities, he was ordained as temple priest at a very young age. A voracious reader, he excelled in his studies and went on to attain two doctoral degrees in two diverse fields of study – the first on butterflies, the second on plants and trees mentioned in the Vedas and Puranas. His patience and love for these winged creatures led to some wonderful findings and insights into the butterflies of the Nanda Devi Biosphere Reserve. His priesthood made him familiar with most Hindu scriptures and helped him explore the history and significance of plants and trees mentioned in the scriptures. He is currently working on documenting the orchids of the Himalayas.

He is also the author of the Terrestrial Orchids (2016), a Fellow International of The Explorers Club, New York, and a member of Nikon's elite group, the NPS.

Balipara Foundation is proud to be associated with the book, HIDDEN TREASURES: RARE PLANTS OF THE ALPINE HIMALAYA that showcases a collection of 100 rare to very rare alpine plants, including 14 new reports for India, all found above 15000 ft in the Eastern Himalayas- Nepal,

Sikkim, Bhutan and Arunachal Pradesh. In-situ documentation of alpine plants is itself a challenge, and Naresh Swami's effort is a great treasure in every sense and will contribute immensely towards furthering the scientific study of the species of flora in these virtually unexplored terrains.



Meconopsis horridula  
J.D. Hooker & Thomson



Lomatogonium carinthiacum



Androsace sarmentosa  
Wallich



Rhodiola cretinii  
(Raymond- Hamet) H. Ohba



Androsace globifera Duby

Pictures Credit: Naresh Swami



# BALIPARA FOUNDATION GOES TO KUNMING, CHINA TO LEARN



Kunming Institute of Botany, Chinese Academy of Sciences, China

## Enhancing Botanic knowledge through partnership with Kunming Institute of Botany

Balipara Foundation Goes to Kunming, China to Learn

Enhancing Botanic knowledge through Partnership with Kunming Institute of Botany, Chinese Academy of Sciences

Located in Kunming, the capital of Yunnan Province, China, is a renowned research institute, Kunming Institute of Botany (KIB). This important research institute is directly affiliated to the

Chinese Academy of Sciences (CAS) and dedicated to research in the fields of Botany and Phytochemistry. It is largely dedicated to exploration of the world of botany, to generate knowledge about it and develop its sustainable use to benefit people.

Naturenomics™ team members, Dr. Gitamani Dutta, Gautam Baruah and Planter Rinku Deka had the privilege to visit the Kunming Institute of Botany to

build a knowledge sharing partnership between Kunming Institute of Botany (KIB) of Chinese Academy of Sciences (CAS) and Balipara Foundation. The partnership purposes to enhance association in the areas of scientific research, expert exchange and international collaborations, while working together in the Eastern Himalayan region.

### Learnings from Kunming Institute of Botany

- Herbarium preservation techniques and systematic arrangement including tree, herb, shrub and lichens
- Learnings on use of modern nursery tools produce 12000 bags per day by using light substrate container seedling machine
- Learnings on seed preservation technique, which starts from collection, followed by drying, cleaning to germination test
- Learnings to identify different varieties of tea along with tea cake preparation
- Learnings on the process of afforestation of Phosphate mining site

During the visit, the team visited the Xiongda tea market of northern Kunming, which is one of the best places to explore the world of tea. Ms. MaHuaxia, who is a student at the Institute accompanied the team to apprehend the process of tea cake making. The tea in the form of cake, is a very popular form of tea in the tea

markets of Kunming and is a specialty of Yunnan. The team also participated in a workshop on traditional PuEr tea making at the market.

The Herbarium of Kunming Institute of Botany contains 248,000 collections including fungi - 87000 (types 350), Lichens - 52000 (types 50) and

Bryophytes- 109, 000 (types 120) and the Germplasm Bank of Wild Species facility is a pioneer in the nation's biodiversity conservation and bio-resource development strategy, which includes the seed bank, micro propagation unit, animal gene bank, DNA bank and nurseries.



The captivating Kunming Botanical Garden, which is situated 12 km away from the center of Kunming has a large diversity of plants inside the glass house. The garden has a collection of live plants such as exquisite Yunnan flowers, Yunnan Chinese herbal, Yunnan essential trees and most of the rare and endangered plants in Yunnan Province. The Kunming Botanical Garden site, has various specialized gardens such as Rhododendron Garden, Medicinal Herbs, Magnolia Garden, Camellia Garden, Exhibition Greenhouse, Gymnosperm Plants, Ornamental Fruits and Foliage.

Along with Dr. Peter Edward Mortimer and Dr. Anne Ostermann, the Naturenomics™ team visited one of the phosphates mining habitat restoration site, to comprehend how agroforestry practices help restore the mining sites. This was followed by a rewarding workshop on modern nursery techniques, which gave the team an insight into the advance technology used as compared to at Balipara Foundation. The technology comprises of two operators that can produce 12000 bags per day by using light substrate container seedling machine. The machine has various benefits, like the structure is simple, the package



Seed Bank at Kunming Institute of Botany

speed is high, and the finished product rate is high too.

With the staff of Centre for Mountain Ecosystem Studies, Kunming Institute of Botany and Prof. Jianchu Xu, the Naturenomics™ team attended the Pre-Chinese New Year Dinner Party, which

is the most important dinner for the Chinese. It was an enriching learning experience and an opportunity for the team to be mentored by renowned botanists of Kunming Institute of Botany.



L-R Naturenomics™ Team Rinku Deka, Gitamani Dutta, and Gautam Baruah during Agroforestry workshop at Mining site of Yunan Phosphate Chemical Group with Dr. Peter Edward Mortimer (Soil ecophysiology) and Dr. Yam Kai (Postdoctoral scholar in Ecology)

#### Partnership agreement with Kunming Institute of Botany

- i. Training and exchange visit of relevant staff between Balipara Foundation and Kunming Institute of Botany on:
  - Planting techniques for nursery development
  - Agroforestry development for Eastern Himalayas
- ii. Reciprocal development for planning of the Botanic Garden with plans for germanium
- iii. Scientific exchange of Botany experiments
- iv. Joint paper publication on botany and agroforestry in Eastern Himalayas
- v. Collaborative research on Muga silk development
- vi. Review of Naturenomics™ education programme and staff exchange for education programme
- vii. Reciprocal development for planning the Herbarium and seed bank centre at Eastern Himalaya
- viii. Participation in structural design and developmental activity of the Botanic Garden





## NATURENOMICS™: CULTURE AND ECO- TOURISM

### Stepping Back In Time

Wild Mahseer, Assam

By Raksha Rao

When I landed in front of my Silver tips bungalow in Wild Mahseer, I was so in awe of my abode for the next 2 days that I almost lost my backpack if not for a virtuous cab driver who came back to return it.

We arrived at Wild Mahseer in the night after a 5 hour drive from Guwahati. Drained and greasy after an entire day journey, I was just looking to settle in while light fruit cakes and cookies appeared, right away. And, Assam's very own Assam black tea as beverage. Incidentally, once the liquid and aromas hit my senses, I was back to my old

pleasing self(!!).

I entered my room to portrait frames and porcelain plates of colorful birds hanging on the walls, curtains and pillows with birds printed on it and a glass walled bathroom. I then sensed a pattern in these rooms, all rooms are themed with either birds, animals, fishes, flowers or plants. Apparently, the wooden furnitures and the brilliant art pieces are personally handpicked by the owner's wife. All in line with its rich heritage of the colonial era. Wild Mahseer is a perfect fusion of history and class tucked into a 22-acre

sanctuary. It gives you the feels of an ancestral family home.

I arrived in First Flush, a dining space with high-roofed, white framed, glass-panelled windows just in time for dinner. The daily menu customarily comprises of Indian and continental dishes. Locally grown organic produce is essentially used while cooking. Chola batura for breakfast and healthy spreads of tomato curry with aromatic Assamese Joha rice for lunch delighted me. They sure know how to make food tasty as well as healthy.



Stay in the Silver Tips bungalow at Wild Mahseer



The First Flush, the dining area at Wild Mahseer, Balipara, Assam, India



## About Wild Mahseer

Wild Mahseer is an award-winning heritage home stay with an old world charm surrounded by lush plantations that makes it an ideal getaway for tea lovers. In total, Wild Mahseer has 5 bungalows, the most opulent one being the 110 year old heritage bungalow with its own library, photographs of the prized mahseer(fish), fireplace and gorgeous decor that puts most of the characterless 5 star hotels to shame. Consequently, the bungalows are named after types of tea: Ambrosia, Silver Tips, Golden tips and First flush.

Located in Balipura division, in the outskirts of Tezpur, about 30 mins south of Arunachal Pradesh state border, it is a relaxing retreat in the heart of nature and makes you feel part of the history. Not surprisingly, some of their guests are world-renowned environmentalists, wild life conservationists, anglers, Hollywood film crews, members of International Diplomatic Corps, and so on.



Way to the 110 year old Heritage Bungalow



The sitting area inside the Heritage Bungalow at Wild Mahseer





## Eastern Himalayan Botanic Ark

Apart from being a first class heritage home stay, what makes it even more special is its continued efforts in conservation and spreading awareness about its native flora and fauna. Also, its eco-friendly way of living. It is part of the Eastern Himalayan Botanic Ark which was inaugurated last year. As a result, Wild Mahseer, as part of Balipara Foundation has a vision to live, love and learn from nature and work towards creating interdependence between nature and economics.



My gang – Vidya, Shruthi and I while on the botanic trail



Herbarium and Seed bank in Wild Mahseer

With Naturenomics™ school, botanic gardens, orchidarium and propagation of rare plant species within the campus – it is well on its way to make Assam a greener place. Dr. Gita Dutta of Balipura foundation, with a Ph.D. in Forest Ecology, detailed us about the conservation of plants, conservation of elephants in Kaziranga, afforestation and concepts of ethnobotany(human-plant interaction) which seemed to be pretty interesting. I was well astonished at the initiative they were taking for a greener future.

The entire staff is very friendly and strive to make sure you have a wonderful experience. They took us around the property and to the nearby national parks and villages as well. Now, the only regret I have is that I didn't stay here long enough!



### **Rakhsa Rao observes the following things in and around Wild Mahseer**

- Botanical trail features thematic sections for nursery, orchidarium, herbarium and seed bank, bamboo septum, medicinal and aromatic plants, fern house, aquatic plants, economically important plants, agroforestry and bird and butterfly attracting plants. In total, 70+ trees, 100+ herbs, birds, butterflies and insects and so on can be found here. Definitely, a botany lovers idea of a vacation.
- Naturenomic bazaar selling pure organic clothes and accessories.
- Tea tasting – Tasting an assortment of Assam black tea.
- Visit to the surrounding tea plantation and factory.
- Cooking classes
- Bicycle rides
- Balipura Saturday Market

### **A short while away from Wild Mahseer**

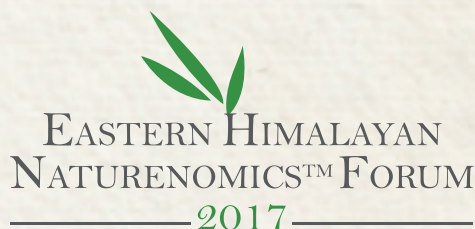
- Check out the duck that flies – White winged wood duck in Nameri National Park. Additionally, depending on the season, you might spot migratory birds here. Further, river rafting along the Jia Bhoroli River or trekking can be done here.
- Kaziranga National Park – a world heritage site, the park hosts two-thirds of the world's Great One-horned rhinoceros.
- Ethnic village tour – Drive to Baligao, 10 mins away from the Jia Bhoroli River – a certified green village by Indian Green Building Council (IGBC) belonging to the Mising tribe (second largest ethnic group in Assam and originally a hill tribe from Tibet and Mongolia). Most noteworthy aspects of this village are the brilliant handlooms woven of silk and cotton by the villagers, and eclectic variety of plants (ranging from almonds, sandalwood, ghost pepper, ayurvedic plants, diversity of bamboos to lipstick leaves and mouth freshener plants).
- Arunachal Pradesh – Wild Mahseer can serve as a stopover while heading to Arunachal Pradesh.





Picture Credit : Saurav Malhotra





# Eastern Himalayan Naturenomics™ Forum, 2017

Community Conservation and Botany

2nd & 3rd, November, 2017

Guwahati, Assam, India

Understanding the dynamics, structure and functioning of the distinctive richness of the Eastern Himalayas, the Eastern Himalayan Naturenomics™ Forum, 2017 over two days will serve as a platform to explore Conservation through the world of Botany and debate, address issues and evangelize innovative ideas and technology for Community- based Conservation, culminating in the recognition of Societal Entrepreneurs who are working tirelessly to create social, economic and environmental impact in protecting the very essential natural resources and restoring the pristine beauty of the Eastern Himalayas through 5th Balipara Foundation Awards.

The Forum 2017 will start with the highlights on the promises we made and revisiting Eastern Himalayan Naturenomics™ Forum, its resolutions and outcomes since 2014.

## Plenaries, 2017

### Plenary 1 - Hidden Treasures of the Eastern Himalayas: Communities and Botany

- The “Asian Elephants” in the room: Humans & Elephants
- Asian Elephant Secretariat: A Digital Haven for Conservation
- Mountain Futures Initiative
- Re-ruralization: Botany at the Heart of Communities
- Understory to Canopy: Smart Afforestation

### Plenary 2 - Nurturing with Nature: The Classroom is Outside

- Where the Wild Things Are: Flora, Fauna & Life Skills

### Plenary 3 - Naturenomics™

- Reclaiming Nature: Renewables Energy & Waste
- EcoTourism: Energizing Livelihood through Botany
- Nurturing Natural Assets to build Nature Capital
- Perception, Imagination, and Inspiration: Biomimicry, Eco-Architecture and Design

### Plenary 4 - The ‘Nature’ of Storytelling

- The Role of Modern Media

## Social Impact Recognition Citations, 2017

Annual Balipara Foundation Award

Naturenomics™ Award

Green Legal/ Journalist Award

Eastern - Himalayan Conservation Award

Green Guru Award

Young Naturalist Award

Food for the Future Award

Nature Conservancy Award

Lifetime Service Award

Special Award: Forest Guard Award



For participation, please write to  
[ehnf@baliparafoundation.com](mailto:ehnf@baliparafoundation.com)



# Balipara Foundation Team

## Elephant Country



**Anshuma Basumatry** swears by the saying - 'Live and let live'. His interests lie in mitigating human-elephant conflict, as well as creating awareness on conservation. He is involved in the regeneration of elephant habitats as a part of the Udalguri Landscape Mission team.



**Robin Eastment**, the first ever Field Executive to be appointed, leads the operations team and manages the Integrated Landscape Programs. His interests lie in understanding the dynamics of human aspirations and the role of people's allegiances to political, economical & cultural ideologies vis-à-vis conservation. His primary aim is to apply these insights into the Foundation's conservation plans.



**Saurav Malhotra** is a Project Executive at Elephant Country – Udalguri Landscape Mission, Balipara Foundation. As part of the Naturenomics™ team he is working with communities in Bodoland to rebuild degraded Asian Elephant corridors through the creation of alternative livelihoods and building assets for local communities. Saurav is also interested in using technology to create awareness about all things science and human rights.

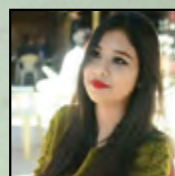


**Subit Sawra** is a part of the Udalguri Landscape Mission and is involved in the mitigation of human-elephant conflict and restoration of elephant habitats in the Udalguri district of Assam. He is also interested in raising awareness about climate change, elephant-habitat loss and its impacts.

## Eastern Himalayan Naturenomics™ Forum



**Karishma Ahmed** is a Naturenomics™ Executive at Balipara Foundation. As part of the team, her efforts are centered on organizing forums & programs, communication outreach strategy and to coordinate and manage communication & branding objectives of the Foundation. Her other interests and expertise include socio-economic research with a special focus on gender empowerment and Ecofeminism.



**Mary Konwar** is a post graduate in English. Her role involves communication, coordination and organizing forums and programs for the organization. Her other interests include painting, drawing and building crafts.

## Eastern Himalayan Botanic Ark



**Chinu Brahma** assists in the operations of Naturenomics™ School at the Eastern Himalayan Botanic Ark. She manages the curriculum and looks after the programmes of the School. She is a post graduate in Geography.



**Darshana Borah**, Project Executive of Eastern Himalayan Botanic Ark, is a post graduate in Environmental Science. As a part of the Naturenomics™ Team, she manages the Ethnobotany Project and oversees Internship assignments. She also looks after the day to day operations of the Ark. Her other interests are in livelihood generation and conservation education.



**Gautam Baruah**, Executive of Operations and Research, is a Masters in Environmental Science, manages the operations at the Eastern Himalayan Botanic Ark. His alternate interests are in Carbon Estimation, Endemic Plant Conservation & creating localized Biodiversity Inventories. His job entails engaging with local communities for conservation & awareness. He also monitors the landscaping work at the Ark.



**Dr. Gita Dutta** is a Programme Officer and Lead Researcher at the Eastern Himalayan Botanic Ark. She is a Ph.D. in Forest Ecology and specializes in plant ecology and conservation, forest regeneration, and biodiversity conservation and has also worked extensively on ecology of tropical forest of North-East India. As a part of Naturenomics™ Team, she operates and manages projects linked to forest regeneration, botanical surveys and conservation education. She is also operating a project on Ethnobotany and managing the Naturenomics™ School Programmes.



**Jyotishman Bora** is a Naturenomics™ Executive at the Eastern Himalayan Botanic Ark. He is a graduate in Botany. He manages the aesthetics and operations of Haatipahar Conservancy Centre.



**Manu Saikia** is a post graduate in Zoology. Her work includes Biodiversity auditing at the Eastern Himalayan Botanical Ark.



**Pinaki Adhikary** is a Naturenomics™ Executive at the Eastern Himalayan Botanic Ark. He is a post graduate in Life Science. He is engaged with the plant based research work at the Eastern Himalayan Botanic Ark.



**Sangita Deka** is a Naturenomics™ Executive at the Eastern Himalayan Botanic Ark. She is a graduate in Tourism. She is the tour guide at the Ark.



## Real Heroes of the Eastern Himalayan Botanic Ark



**Bhadra Nahak** is the Head Gardener at the Eastern Himalayan Botanic Ark. He is an expert in gardening techniques, germination and plantation.



**Debo Deka** is a Field Supervisor at the Eastern Himalayan Botanic Ark. He supervises the field work at the Ark and also assists in the project of Ethnobotany.



**John Sona** works as an Office Assistant at the Eastern Himalayan Botanic Ark. He deals with the finances and looks after the accounts of the Ark.



**Nibedan Kurmi** is a Field Supervisor at the Eastern Himalayan Botanic Ark. He looks after the field work operations at the Ark.



**Nirmal Saikia** is a Field Worker at the Eastern Himalayan Botanic Ark. He is an expert in handling the garden tools and equipment.



**Phulen Das** works as a Field Assistant at the Eastern Himalayan Botanic Ark. He uses his expertise in the management of the Ethnic Restaurant, Bhela Ghor.



**Rajen Kurmi**, a retired Ranger of the Assam Forest Department, is an on-field mentor of the operations team. He has 30 years of working experience with the forest communities. His experience includes participation in conflict for mitigation measures; forest restoration through Village Management Committees and Silviculture operations, his wisdom is unique, relevant & practical.



**Salu Tanti** is an Office janitress of Eastern Himalayan Botanic Ark. She cleans and dusts away the offices and infrastructures of the garden.



**Tez Bahadur** is a Field Worker at the Eastern Himalayan Botanic Ark. He assists in the field work of the garden.

## Naturenomics™ Team



**Aristo Mendis** is an Executive at Balipara Foundation, working with the Business Planning and Fundraising team. He is a postgraduate in Ecology and Environmental Sciences from Pondicherry University.



**Girish Karnik** manages the operations of the foundation. He oversees teams and manages the monthly project reviews, budgeting and planning activities the foundation undertakes.



**Kalpesh Popat** manages all the IT needs of the foundation. With extensive experience in building IT systems, designing websites and mobile applications, he manages all the foundation's digital properties.



**Nitu Kalita** has been managing the Finance, Admin & HR functions since the last 7 years, besides also adding value through his background as an educator. His contributions are towards increasing operational efficiency and he is the custodian of the Foundation's Operational Manual & Policy Guidelines.



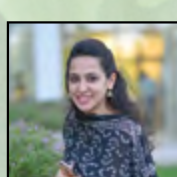
**Mansi Parikh** works with the business team to design business plans and build partnerships. She adds her expertise in marketing, entrepreneurship and business model design to the team. Passionate about development she hopes to add a human centered design perspective to the organizations business model.



**Rakhi Bhansali** works alongside the founding trustee to facilitate the flow of all verticals under Balipara Foundation. Her role involves communication and coordination to promote the activities that team members at Balipara Foundation are a part of.



**Sangeeta Menezes** works closely with the founding trustee to coordinate all the project and business teams' activities. She forms the vital link between the team's located across geographies to help them achieve their goals.



**Varsha Wadhvani** manages all the social media outreach of the organization. She curates the work that the field teams are doing to engage with digital audiences while showcasing the foundation's efforts and promote discussions about conservation. Her interests are in copywriting, social media management, blogging and photography.



## The Balipara Foundation Awards 2016

Recognising Leaders who create positive impacts in the Eastern Himalayas by innovating and creating new paradigms in Social- Economic and Environmental horizons.



### From Left to Right

**Top Row-** Nicholas Claxton, Radhika Barthakur, Ranjit Barthakur, Keshab Mahanta, Mr. G.Thong, Ramen Das, Jayshree Naiding

**Bottom Row-** Rohit Choudhury, Sandeep Gurung, Purnima Devi Barman, Jigme Dorji, Punyo Paya, Miksak Apal Natural Resource Management Group, Robin Naiding, Rajeev Goyal



# BALIPARA FOUNDATION

Assam • India

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Picture Credit: Saurav Mathotra