



INDIA, NATURALLY!

INDIA'S LIVING BIODIVERSITY –
A PEOPLE'S RESOURCE
FOURTH EDITION

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A PEOPLE'S RESOURCE**

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Celebrating Champions of Biodiversity

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The illustrious jury has offered tireless contributions in reviewing and recognizing the cases. The jury members consisted of experts from a variety of related fields of conservation management and different sectors of life, who brought their specific inputs into the finalisation of the 2020-2021 India Biodiversity Awards process.

Dr. Erach Bharucha, Chair of the Jury contributed substantially to this publication by developing various chapters including the case studies. Valuable contributions in terms of field validation and documentation of the cases have been received from the UNDP, MoEFCC and NBA staff, along with the interns under the MoEFCC-NBA-UNDP Biodiversity Samrakshan Internship Programme (BSIP).

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मंत्री
पर्यावरण, वन एवं जलवायु परिवर्तन
और
श्रम एवं रोजगार
भारत सरकार



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ENVIRONMENT, FOREST AND CLIMATE CHANGE
AND
LABOUR AND EMPLOYMENT
GOVERNMENT OF INDIA

भूपेन्द्र यादव
BHUPENDER YADAV



MESSAGE

Conservation of biodiversity and living in harmony with nature is deeply ingrained in India's culture and ethos, reflected in our traditional lifestyles and knowledge systems. Our ancient wisdom, combined with modern scientific advancements, offer solutions not only for India but for the entire world to live in harmony with nature.

It gives me immense pleasure to say that the fourth edition of India Naturally publication very apply narrates the stories of winners of the India Biodiversity Awards. These conservation stalwarts are an inspiration for all of us and demonstrate how all sections of the society can play a role in conserving our precious biodiversity. As a way forward, we must consider documenting the impact of the Awards on their further endeavours.

I am confident that this publication will play an important role in inspiring individuals, communities, government agencies and line departments, academic and research institutions and private sector – all the stakeholders who need to come together to work for a sustainable future.

The best practices documented in this publication highlight the value of collective action. I am positive that they will encourage everyone to come forward and contribute towards conserving our natural heritage.

I would like to congratulate the officials of the Ministry of Environment, Forest and Climate Change and National Biodiversity Authority on the continued success of the awards and also appreciate the partnership with UNDP in supporting this process and bringing out this publication.

(Bhupender Yadav)

Date: 16.06.2022

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पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND
CLIMATE CHANGE



FOREWORD

India has made concerted, co-ordinated and consistent efforts in the area of biodiversity conservation. One of the key steps has been the creation of a robust institutional mechanism to meet the commitments under the Convention on Biological Diversity, comprising the National Biodiversity Authority at national level, State Biodiversity Boards at sub-national level and Biodiversity Management Committees at local level.

A number of stakeholders have contributed through innovative measures and efforts to conserve the country's bioresources. According recognition to the initiatives being taken by individuals, communities, development organizations and the private sector, serves as an incentive to continue these exceptional efforts.

The 'India Naturally' publication provides a brief glimpse into impactful stories of the winners of the India Biodiversity Awards from across the country. These stories highlight how participation of a diverse range of stakeholders can ensure protection as well as sustainable use and management of biological resources.

The 'private sector plays a key role as many products depend on bioresources. Corporate Social Responsibility can be utilized towards conservation and sustainable use of biodiversity, specifically for training and capacity building of communities and grassroot-level institutions.

I congratulate the National Biodiversity Authority and the United Nations Development Programme for leading this initiative and for bringing out the stories of conservation champions from all across the country.

I am confident that this publication will inspire many more individuals and organizations to come forward and take proactive measures for conserving and preserving India's rich biological heritage.

[Leena Nandan]

New Delhi, June 15, 2022



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Dr. V. B. Mathur
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राष्ट्रीय जैव विविधता प्राधिकरण
National Biodiversity Authority
भारत सरकार
Government of India



FOREWORD



Our lives, livelihoods and economy are all dependent upon biological resources and the ecosystem services they provide. Concerted efforts by the communities and organisations towards conservation and sustainable use of biodiversity, and fair and equitable sharing of benefits arising from the use of genetic resources is extremely important to tackle the immense pressure on biodiversity and ecosystem services.

India has a time immemorial tradition of conservation which is reflected in the exceptional efforts of individuals as well as institutions to protect our biodiversity and ensure sustainable use of natural resources.

I am pleased to say that the India Biodiversity Awards, a collaborative effort between the Ministry of Environment, Forest & Climate Change (MoEFCC), the National Biodiversity Authority (NBA) and the United Nations Development Programme (UNDP), have been successful in recognizing such efforts.

The India Naturally publication documents select outstanding stories of biodiversity conservation, sustainable use, access and benefit sharing and biodiversity governance, recognized through the India Biodiversity Awards. I am confident that this publication will be found useful by practitioners, policymakers, and environment enthusiasts from all over the world.

I congratulate the team at the MoEFCC, NBA and UNDP in developing this publication. We will continue to identify and recognize such commendable efforts towards conservation and sustainable use of biodiversity from all corners of India.


Dr. V. B. Mathur
Chairperson

May, 2022
Chennai

PREFACE



The air we breathe, the water we drink and the food we eat all come from biodiversity. It is essential for our health and wellbeing. We derive benefits from biodiversity at all levels – as individuals, societies, industries and governments. Therefore, we also need action at all levels to protect it.

India is home to over eight percent of the world's total plant and animal species. It has four of the 36 global biodiversity hotspots – natural ecosystems that host many important species in a relatively small geographical area. Thus, India has a very important role to play in securing global biodiversity.

The India Biodiversity Awards recognize the champions of biodiversity conservation across local communities, governments, civil society organizations and the private sector. The stories of the award winners documented in this publication demonstrate solutions that can ensure sustainable co-existence between humans and nature.

The United Nations Development Programme has been a proud partner to the Ministry of Environment, Forest & Climate Change, and the National Biodiversity Authority for the India Biodiversity Awards since its 1st edition in 2012.

We are committed to working with the government and all other stakeholders towards achieving the shared vision of 'living in harmony with nature'.

Shoko Noda
Resident Representative
United Nations Development Programme

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LIST OF AWARD WINNERS 2020-2021



ABBREVIATIONS

ABS	Access and Benefit Sharing	KRAPAVIS	Krishi Avum Paristhitiki Vikas Sansthan
BD	Biological Diversity	MFP	Minor Forest Produce
BMC	Biodiversity Management Committee	MoEFCC	Ministry of Environment, Forest and Climate Change
CAMPA	Compensatory Afforestation Fund Management and Planning Authority	NBA	National Biodiversity Authority
CBD	Convention on Biological Diversity	NbS	Nature-based Solutions
CBOs	Community-Based Organisations	NBT	National Biodiversity Target
CCA	Community Conserved Area	NERIST	North-Eastern Regional Institute of Science and Technology
CEE	Centre for Environment Education	NTFP	Non-Timber Forest Produce
CoP	Conference of Parties	OECMs	Other Effective area-based Conservation Measures
DEST-HP	Department of Environment, Science and Technology, Government of Himachal Pradesh	PBR	Peoples' Biodiversity Register
EBA	Endemic Bird Area	RARS	Regional Agricultural Research Station
EDC	Eco-Development Committee	RET	Rare Endangered Threatened
GBF	Global Biodiversity Framework	RFO	Range Forest Officer
GEF	Global Environment Facility	SDGs	Sustainable Development Goals
GDP	Gross Domestic Product	SHGs	Self Help groups
GOMBRT	Gulf of Mannar Biosphere Trust	UNDP	United Nations Development Programme
IBA	India Biodiversity Awards	UNEP	United Nations Environment Programme
IUCN	International Union for Conservation of Nature	USD	United States Dollar
JFMCs	Joint Forest Management Committees	WASSAN	Watershed Support Services and Activities Network
KAU	Kerala Agriculture University	WEPs	Wild Edible Plants
KNCTS	Khonoma Nature Conservation and Tragopan Sanctuary	WII	Wildlife Institute of India
		WWF	World Wide Fund for Nature

INTRODUCTION



Photo by Sreehari Devedas on Unsplash, HP India

Biological diversity with both ecological and economical value, is a vital asset globally, and forms the foundation for sustainable development with its cross-sectoral linkages. Health, wealth, food security and many other needs of human beings are dependent on natural resources, and yet, the indiscriminate use and resultant loss of biodiversity by human beings threaten the very survival of the planet itself. The loss of habitats, pollution, climate change, the introduction of invasive species and the overexploitation of natural resources—all put biodiversity under pressure. Biodiversity loss has enormous economic consequences as well; more than half of the world's GDP, or USD 44 trillion, is moderately to highly dependent on nature and its services—and, therefore, exposed to nature-related risks.

In 2020, the consequences of biodiversity loss became all too familiar, with the COVID-19 pandemic illustrating how an invisible shift in nature can manifest as a global socio-economic crisis. With such high stakes involved, all stakeholders in society, from leaders of nations to individuals, have a role to play in protecting biodiversity.

To address these biodiversity risks, the global experts agree that a scientifically credible and necessary interim goal is to achieve a minimum of 30 per cent planet protection by 2030. Currently, an estimated 15 per cent of the world's land and 7 per cent of the ocean are protected. To achieve the 30x30 target, the world needs to double the current land protections and more than quadruple current ocean protections¹.

¹ <https://www.campaignfornature.org/news/category/30x30>



INDIA'S APPROACH TO BIODIVERSITY CONSERVATION

India is among the 17 megadiverse countries of the world. With only 2.4 per cent of the world's land area, India harbours 7-8 per cent of all recorded species, including nearly 49,000 species of plants and over 1,00,000 species of animals. India also has a long coastline of about 7,517 km. The country's remarkable biological diversity includes a mosaic of natural and cultural habitats, and its economy and the livelihoods of millions of people are dependent on the conservation and sustainable use of these biological resources.

Underlining its commitment to achieving global targets related to the conservation of biodiversity and associated ecosystem services, India recently achieved the global Aichi Biodiversity Target of 17 per cent of terrestrial area-based conservation. In the same streak, the country aspires to contribute to the upcoming Post-2020 Global Biodiversity Framework (GBF) targets as well as the U.N Agenda 2030 and its Sustainable Development Goals.

In India, There is an inherent consciousness about the value of biodiversity and the need for its conservation. Since time immemorial, people, institutions and organisations both in the government and outside the government have been taking measures that protect, conserve and enhance biodiversity at various levels. Thus, India is dotted with a myriad of inspiring conservation stories, involving a range of stakeholders deserving recognition and praise for their noteworthy efforts.

RECOGNISING CHAMPIONS OF BIODIVERSITY

In 2012, it was realized that in India, biodiversity conservation and its utilisation had several champions and institutions, within the government as well as in community-based organisations (CBOs). While they had been supporting the conservation and sustainable development objectives of the Sustainable Development Goals, they were yet to be formally recognized or rewarded.

Thus, evolved the concept of India Biodiversity Awards (IBA), to fill this gap by incentivising individuals and institutions who worked tirelessly towards conservation and sustainability. Since then, five rounds of the Awards (2012, 2014, 2016, 2018 and 2021) have been successfully organised, recognising a variety of conservation champions and institutions.

The first three awards held during the years 2012, 2014 and 2016, were facilitated by the Ministry of Environment, Forest and Climate Change (MoEFCC) in association with UNDP. The Awards were institutionalised with the National Biodiversity Authority (NBA) in 2017. UNDP India continues to serve as the knowledge partner for the awards.

The IBAs have translated into 'India Naturally!', a publication which captures the innovative conservation measures active at grassroot level across the country.

ABOUT "INDIA, NATURALLY!"

The 'India, Naturally!' publication documents the select outstanding models of biodiversity conservation, its sustainable use, local governance and access and benefit sharing arising from use of biological resources and associated knowledge. The publication is also a tool for conservation education and public awareness as it generates awareness and sensitises people and institutions.

The publication has evolved over 2014, 2016, and 2018 as a set of stories of the champions of biodiversity conservation and sustainable use across India. This fourth edition of 'India, Naturally!' brings to the reader stories of the fifteen awardees, including ten winners and five special mentions. These models of conservation showcase how various actors in India manage change through innovative approaches and conserve biodiversity.

This publication can be widely used at various platforms across the country to motivate and inspire various stakeholders to take initiative and jointly work towards conservation of India's unique natural heritage.



CONSERVATION OF WILD SPECIES



The conservation and well-being of wildlife including the Rare Endangered Threatened (RET) species requires special support for areas that form key habitats for our flora and fauna. Recognising the efforts towards conservation of wild species as well as management and restoration of their habitats for accelerating prevalence of endangered species, this category aligns with conservation of biological diversity- a key objective of the CBD as well as the Biological Diversity (BD) Act, 2002.

- The case of Great Myna is the story of targeted efforts by the Chongnga Foundation in Manipur, with strong community support, leading to an exponential increase in the species population in the region.
- The case of Mr. Shiv Kumar is the story of a passionate forester from Himachal Pradesh, who has closely studied and documented high altitude mammals and avifauna of the mighty Himalayas.



NO BIRDS NO LIFE: CONSERVATION OF THE GREAT MYNA

CHONGNGA FOUNDATION, MANIPUR

Conservation of Wild Species
WINNER

AN OVERVIEW

Nestled within the Indo-Burma global biodiversity hotspot, the north-eastern state of Manipur harbours a huge variety of resident and migratory bird species. A reflection of Manipur's evergreen forests, this diversity of birds is facing threats owing to the increasing deforestation and rampant use of insecticides. As a result, there has been a decline in the number of various migratory bird species particularly the Great Myna or the white-vented myna, locally called Chongnga. The Great Myna works as a natural controller, producer, and enhancer as it feeds on insects and parasites, enabling the farmers to curb the use of chemical insecticides, thus being famously regarded as the 'friend of the farmers' in Manipur. The decrease in the number of the Great Myna is significant as it is an indicator that signals a possible decrease in other lesser-known species as well.

With the motto of 'No Birds, No Life', the Chongnga Trust started their journey of wildlife conservation in 2013 with the objective of protecting the Great Myna. The Manipur-based Chongnga Foundation, established by Mr. Bankimchandra Singh, observed a pattern signalling a decreasing number of sightings of these migratory birds since the 1980s. Mr. Singh, who is an avid ornithologist, was introduced to the great wonders of the Great Myna, in search of nesting sites in the spring, by his beloved grandmother. His childhood fondness for these birds persuaded him to establish the

Chongnga Foundation for their conservation. With a strong support from local community members, the Foundation has made a remarkable effort towards protecting these birds and also increasing their numbers by materialising unique initiatives such as designing specialized nesting pots. With these targeted efforts by the Chongnga Foundation, the number of mynas flocking around in the area has increased from 10-20 to a few hundred.



ABOUT CHONGNGA, THE GREAT MYNA

The Great Myna is a small, black-coloured bird with a spiky crest, a bright yellow bill, and a distinctive white vent. The bird can often be seen resting on livestock and nesting in the hollows within tree trunks. Their habitat includes meadows, fields, and urban gardens, where they forage in flocks, often with other species of mynas and starlings. They are a frugivore that feeds mostly on raw fruits or succulent fruit-like produce of plants such as roots, shoots, nuts, and seeds and has a special affinity for ficus fruits. Owing to this, myna has contributed to the regeneration of these keystone tree species by helping in seed dispersal.

The bird is mostly seen in Imphal along the stretches of the riverbank, extending for about 10 square kilometres in the Thongngam Modum Reserve Forest area. The birds are often sighted when the farmer's plough disturbs insects, demonstrating an association between the nesting season of the Great Mynas and the paddy's growing season.



TRANSFORMATIONAL MEASURES WITH CONSERVATION IN MIND

Mr. Bankimchandra setup earthen pots on tree branches to simulate a hollow in an old tree that mimics the natural nest of these birds in the wild. This is being practiced as relayed to him by his grandmother, beautifully indicating how the traditional knowledge system is orally transmitted down the generations, especially in our complex tribal societies. This traditional knowledge system holds pearls of wisdom guiding us to protect our nature.

The organisation actively discourages the use of pesticides and prevents trapping and poaching thus promoting a holistic approach to conservation while arousing the sentiments of the locals.

These actions have also brought about a transformed attitude and has created a positive perception amongst the locals especially the farmers about the need to conserve these bird species. Relentless efforts of the organisation have led to the locals realizing the importance of the birds as “Friends of the Farmers”. Moreover, these endeavours have successfully discouraged the local community from hunting the bird for sport.

Along with this, these initiatives have simultaneously enhanced the livelihood of the locals. While the local potters and artisans have been engaged in designing and moulding the clay-made nest pots, the local tree climbing skills are being used for the installation and maintenance of these nest pots. This has made the whole process a conservation movement at the community level.

SIGNIFICANT OUTCOMES

The Foundation has caught the attention of enthusiastic bird watchers, ornithologists, and experts who have lent their support to this initiative. Since placing the specially designed nesting pots in appropriate locations is critical to successful breeding to provide what the bird needs for raising a family. The design of the dual pot has been made specifically for this purpose. The outcome has been highly successful, and the population has been greatly enhanced. 1,700 artificial nests have been distributed in these areas till 2019.

The remarkable contribution of conserving and successfully supporting the breeding of the birds has been recognised by the District Forest Officer. The forest department felicitated the organisation for its conservation initiatives with the best prize for conservation during the wildlife week celebrations in 2018, held in Imphal.



SOURCES OF FUNDING

The primary funding for the organisation is provided by the founder, Mr. Bangkimchandra Singh. Other funds include contributions by generous community members, Manipur Forest Department, and the District Forest Officer. Names of the donors are featured on the earthen pots nesting sites and the donors are regularly updated on the status of the myna nesting.



THE ROAD AHEAD

The enthusiasm and grit of the organisation and the local population promises an optimistic future ahead. Recently, the eminent jury team at the wildlife week provided scientific datasheets for enabling documentation of nesting success in different areas. This has been used in the monitoring of over 50 nests of mynas which would further enhance the documentation process.

To consolidate the progress in a scientific and sustainable manner, more organised and planned initiatives need to be chalked out. These include:

- The organisation approaches and connects with universities and college institutes or interested parties to garner support for well-organised and proper documentation on nesting successes, monitoring the population growth of the birds, and augmenting further scientific research as per requirement.
- Distinct and specific outcomes of the initiatives undertaken to conserve the bird need to be properly measured.
- Significant natural and anthropogenic threats to the bird species need to be addressed.
- A proper channel for funding in a systematic manner must be identified for sustaining the conservation action in the long run.

The organisation has done commendable work for the conservation of Great Myna. These activities need to be further replicated in other parts of the region in a holistic manner if we are to witness successful conservation throughout.



“We have come this far yet miles to go.”



THE FORESTER SCIENTIST

MR. SHIV KUMAR, DEPUTY RANGER,
HIMACHAL PRADESH

Conservation of Wild Species
WINNER

AN OVERVIEW

The high-altitude regions of the Himalayan state of Himachal Pradesh are a trekker's paradise. From the majestic snow leopards to the captivating Western Tragopan it abounds with breath-taking wildlife that any wildlife photographer would be enthusiastic about capturing through his lens. Deputy Range Forest Officer Shiv Kumar is one such person who has been taking pictures of the wildlife for over a decade. In the rough terrain of Lahaul-Spiti, it is no easy task. He has photographed brown bears, Tibetan wolves, Musk deer, and the rare snow leopard which makes for a very difficult subject. The snow leopard has made him excited to capture that split second that the elusive species of the snow leopard offers very rarely. Mr. Shiv Kumar also has a keen interest in Himalayan avifauna and is highly committed to biodiversity conservation.

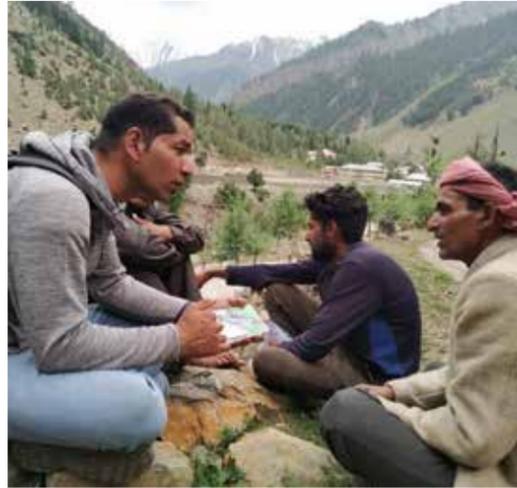
As a native and a trekker of the steep and snowy slopes, he understands the complexity of being a forester in charge of a region where wildlife and human conflicts are common. The migratory shepherd's flocks face the threat of predation by snow leopards and Tibetan wolves, both highly endangered species that wander to the herds in search of food. As a Deputy Forest Ranger his duty encompasses looking after wild creatures and their habitats. He has been working beyond the call of duty in a unique habitat in the Trans Himalayan biogeographical region in Lahaul for over 10 years!

Despite the remote location of his work as a Forester, Mr. Shiv Kumar is endeared and well known among the locals as a photographer and

a 'Citizen Scientist', who has closely studied and documented high altitude mammals and avifauna of the mighty Himalayas. He is passionate about spreading awareness on wildlife conservation and is equally skilled at communicating with the local people, school children, visitors, photographers, and scientists alike. Mr. Shiv Kumar is the recipient of Sanctuary Nature Foundation's support for his dedication to wildlife.

"I have been working for the conservation of wildlife, especially snow leopards, in Lahaul & Spiti Valley since 2010. In 2016, I started to make professional documentaries about snow leopards. I captured a leopardess along with her two cubs on my camera."





Shiv Kumar remembers his ancestors saying that there were times when they used to spot snow leopards in the valley regularly. He believes that they may soon become extinct probably due to conflicts with shepherd communities. He believes his major life's work is towards the conservation of this species by solving human – snow leopard conflict in the region.

A NEW HORIZON

Mr. Shiv Kumar has played an important role in documenting the species found in high-altitude landscapes of the Himalayas, such as the elusive snow leopards, Tibetan wolves, Lammergeier, and other fascinating wildlife. Not only did he capture them through his camera lens, but he has dedicatedly documented the behaviour of the key mammalian as well as avian species in the region. Through these documentation efforts, a lot can be learnt about the wildlife of the Himalayan region which would support policymaking and planning efforts for conservation. He has 6 years of data on individual snow leopards including one female snow leopard with a single cub and another with two cubs.

Another important contribution that he has made towards wildlife conservation is to mitigate human-wildlife conflict through advocacy for flexible claim settlements for shepherds' livestock that are predated upon by wolves and snow leopards. Early and prompt settlements of claims reduce the economic impact on herders, which helps in avoiding retaliatory attacks on the predators by the aggrieved herders. The RFO has helped smoothen over the process by simplifying procedures for the prompt provision of compensations. As a forester in the field, he has been advocating alteration of present tardy procedures, post-mortems, and bureaucratic hurdles, which aggravate the shepherds' displeasure with the wild predators and the Forest Department. If Mr. Shiv Kumar's rapid response methods are followed across Himachal Pradesh, the instances of poaching of these unique species by local shepherds who often give up trying to get their rightful compensation will be sorted out.

CHALLENGES ADDRESSED

The high-altitude Himalayan regions of Himachal Pradesh are important wildlife habitats that are highly inaccessible. The terrain is rugged and is snowbound for many months of the year. Despite the harsh conditions, the region has some of the most unique mountain mammals in the world. The snow leopard is the apex predator in the landscape and also a keystone species. It is one of the rarest of India's big cat species and is officially the flagship species of the Himalayas. Its camouflage makes it difficult to spot, let alone photograph. A cameraman behind a long lens has to be extremely patient and display perseverance for years to get a picture. Due to its elusive nature, not much is known about it and more scientific data is required to understand it better.

The biogeographic region where the snow leopard is found in Protected Areas includes about 10,000 square kilometres of desolate landscape. It is primarily located in Pin Parvati; Seichu Twan and Rupi Bhabha Wildlife Sanctuaries. Much work needs to be done by wildlife scientists in this incredible biogeographic Northern Himalayan range of mountains. Mr. Shiv Kumar has travelled across the rugged snow-covered eco-region of his native region, Lahaul Spiti, to not only capture the majestic snow leopard which is the fascination of a lot of photographers but also to study and document details about these 'Guardians of the Himalayas'.

FACING OBSTACLES

The remoteness of the region poses a great challenge for all those seeking to understand the wildlife and biodiversity of the region. In order to study the wildlife in the region and for its documentation, one has to traverse rugged terrain which is covered with snow for a large part of the year.

In addition, negotiating between aggrieved herders and department officials came with its own set of challenges. During the initial days, the need for increased support from his departmental superiors took a long time. Also, convincing agitated herders required rapport building and it took some time to earn their faith.

New hurdles came up when he was setting up several cameras in the landscape to capture wildlife. One of them was damaged by a Himalayan Brown Bear, while another was broken by a shooting stone.

BECOMING THE 'LONE RANGER'

With his passion and grit to overcome any obstacles he may face on the road to conservation, Shiv Kumar has become a role model for young people in Lahaul-Spiti. He is known to wildlife biologists, both foreign and Indian, as a reliable observer and valuable supporter of wildlife research. He has worked with several conservation scientists of repute and provided his expertise to a foreign university. His fascination for wildlife made him start taking photographs, especially of enigmatic species such as snow leopard, ibex, and brown and black bears. While his ability to capture the most elusive animals on camera is admired by other wildlife photographers and both professionals and amateur wild lifers, it plays an important role in generating public awareness towards wildlife in general, and these rare species in particular. He has also developed expertise in bird ringing and has worked as a support system for Indian and foreign wildlife scientists. This is the type of work that sensitises young people to become advocates for wildlife conservation in the future.

The cumulative actions of Mr. Shiv Kumar have brought wisdom in spreading awareness and at the same time has instilled sensitivity among the locals. His extensive work with migrant shepherds is a key to conserving wild species in a zone where humans and predators use the same habitat and the chances of human-wildlife conflict are high. The migratory shepherds also shared with him their traditional knowledge of rare species of the mountains which helped him work on detailing the documentation he has been doing for the wildlife of the region.



"I rely more on the traditional knowledge transferred by elders about the hotspots, seasons, and behaviour of wildlife."

FUNDING SOURCES

In his early years, Mr. Shiv Kumar had little financial support for his work which extended beyond the terms of his duties as a forester. His deep passion for wildlife as well as his sensitivity to the local shepherds' needs kept him motivated to continue.

As the project leader of 'Mud on Boots,' he received a grant from the Sanctuary Nature Foundation in 2019 which aided him in organising school-based awareness programmes and surveying migrating shepherds. He also managed to set up camera traps on his own, with the support of University of Chicago Professor Trevor Price and Munmun Dhalaria (National Geographic Explorer).

THE ROAD AHEAD

In the last decade, Mr. Shiv Kumar has become an expert conservationist who is highly appreciated within his own department. A willing trainer for other forest personnel, he is acknowledged as a well-known citizen scientist as well. He has played an advocacy role for specific human-wildlife conflict situations in the mountains at the policy level.

His major strength is his contribution to conservation, which is based on his deep passion for wildlife, combining his official work with developing his own expertise in photography. With this, he plans to make a wildlife documentary about the wilderness of Lahaul Spiti. The major challenge in this regard would be to provide for a significant budget to hire a professional team and shoot a documentary with music and voice over, as well as a few aerial footages of the landscape, interviews with local stakeholders, and interviews with the migratory shepherd population.

The small steps by the "Forester Scientist" rippled a big revolution in a sense which has set an example not only for the forest officials but also for the local community members for conserving their biological heritage.



CONSERVATION OF DOMESTICATED SPECIES



Domesticated flora and fauna may be supported by individuals whose passion for conservation drives them to action. The protection and promotion of indigenous varieties of crops, medicinal plants and animals are critical to food and nutritional security and overall human well-being.

The IBA recognises the efforts of individuals and institutions towards conservation of domesticated species through effective management of habitats stimulating significant reduction in threat level. This Award category focuses on the implementation of the long-term conservation and sustainable use strategy of domesticated flora and fauna across our country.

- Mr. Shaji N M from Kerala is known as 'Tuber Man' due to his collection of 200 local tuber varieties and specimens from across the country.
- Mr. Tog Chand from Himachal Pradesh has been recognised for his efforts towards greening of the mountains and enhancing local farm produce.
- The case of Amrabad Poda Laxmi Govu Sangam from Telangana stands out as an incredible example of collective community action towards conservation of Poda Thurpu, an indigenous cow breed.
- The case of Sailulak Sial Vulh Association, Mizoram highlights the extraordinary feat of saving the near-extinct Mithun by a few families in the Sailulak village.



THE TUBER MAN OF KERALA

MR. SHAJI N. M, KERALA

Conservation of Domesticated
Species (*Individual*)

WINNER

AN OVERVIEW

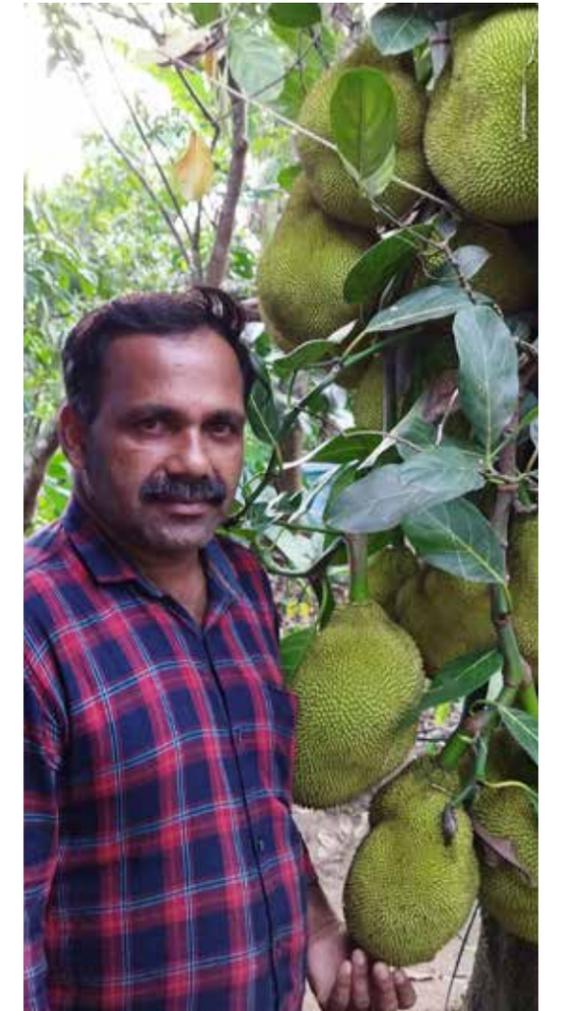
Mr. Shaji N.M. is a farmer, citizen scientist and a conservationist living in Wayanad district of Kerala. Having an expertise in tuber crops with an unbelievable collection of 200 local tuber varieties and specimens from different biogeographic regions of the country, he is popularly known as the 'Tuber Man of Kerala'.

Mr. Shaji's incredible journey demonstrates the importance of the traditional knowledge System in ensuring food security that is in consonance with modern science and also has the ability to combat future implications of climate change. His acquired knowledge about the food plants helped him in successfully bringing home nearly 250 ethnic plant varieties, two dozen of animal/poultry/fish varieties in a single field. The Kerala State Biodiversity Board had acknowledged his work and made him the Project leader of the 'Tuber Crop Diversity Conservation Project – Germplasm'.

Moreover, he is an innovator and has developed 'seed pens' which are biodegradable paper pens within which seeds of vegetable plants of wild varieties are embedded. Shaji's future ambitions include developing cultivation into a well-established method that will allow him to produce richer agricultural plant kinds. He intends to construct a bio-rich research university for future generations by cultivating a diverse crop variety in waste sites.

OVERCOMING THE CHALLENGES

Shaji's interest in tubers began in childhood when his family faced severe drought in Kerala and he realised that in conditions of drought, tubers could support them and help stave off their hunger. With this knowledge he set out to spread awareness among local people about the importance and value of wild tuber crops. He worked as a citizen scientist and promoted traditional practices and knowledge among other farmers and students. He was also faced with other challenges such as communication problems due to linguistic issues, extensive traveling through deep forests to collect tuber varieties, unavailability of funds during initial stages and contamination from weather extremities. But with his strong passion he overcame all difficulties and successfully implemented his practices.





ACTIONS TAKEN

Mr. Shaji N.M. started with cultivation of 6-7 tuber varieties but with time he intensified the collection process by visiting farmers, tribes, institutions, and forests across different parts of India. Now he cultivates more than 200 varieties of tuberous plants, with a few wild varieties. These are displayed to tourists and the local community in his farm that is spread across approximately 25 acres, that he has named as 'Kedaram', which translates as, 'a solemn place'. Shaji has also taken initiatives to document and conserve traditional knowledge, along with ethnic plant varieties, through his close association with the tribal communities.



Mr. Shaji's incredible genetic conservation initiative is also supporting research by providing germplasm to the regional plant research center. As a result, he is now affiliated with Kerala Agriculture University (KAU), Kerala Research and Resource Center, and Regional Agricultural Research Station (RARS). The Kerala State Biodiversity Board has acknowledged his work and knowledge of tubers by making him the Project leader of the 'Tuber Crop Diversity Conservation Project – Germplasm'. His local tuber varieties have now been included in the Edavaka Gram Panchayat's People's Biodiversity Register.

He has developed an integrated farming model wherein he has been successful in bringing home nearly two hundred and fifty ethnic plant varieties, two dozen of animal/poultry/fish varieties in a single field. Mr. Shaji has also created futuristic innovations-seed pens, which are made of biodegradable papers within which seeds of vegetable plants of wild tree varieties are embedded.

OUTCOMES OF THE PRACTICE

Mr. Shaji N.M. helped propagate tribal wisdom through his interaction with the local tribal communities and using that traditional knowledge to educate the farmers about the traditional farming practices. He has been pivotal in spreading awareness among the community members, especially the farmers, about the importance of tubers in food and nutritional security. He also has been able to employ multiple farming techniques, such as multi-cropping and multi-tier farming, on a single farming unit thus leading to effective utilisation of the farms.

His innovations like 'seed pen' have been inspiring students to opt for greener products and work for the conservation of biodiversity. Mr. Shaji has 200 varieties of tuber collection, which largely complements wild varieties from Kerala's Western Ghats – a hotspot of global importance for plant life. This collection has been enhanced by tubers from different biogeographic regions of India. In addition to cultivating a wide variety of tubers, he has also grown other indigenous food varieties. This includes 52 varieties of rice, vegetables, and plantain crops. Through all these, fellow farmers have been motivated into food crops and eco-friendly farming in a state like Kerala where cash crops and chemical farming are prominent.



KEY LESSONS

Mr. Shaji N.M., is an excellent example of how a simple farmer could become a conservation leader. His conservation strategies exemplify how the utilization of traditional knowledge could benefit communities in becoming resilient in the face of adversities. Some key takeaways from this practice are:

- The most important aspect of this good practice is the acknowledgement of the wild food varieties like tuber plants which are packed with high nutritional value and are important in food security. The strategy employed effective communication strategies and resulted in in-situ tuber conservation for ethnic, unusual, and almost extinct wild varieties and greater awareness among the locals about the importance of tubers.
- Three Sustainable Development Goals (SDGs) are directly aided by this conservation strategy. This practice directly contributes towards SDG 12 which focuses on responsible consumption and production, whereas SDG 13 focuses on climate action and SDG 15 focuses on Life on Land. Wild variety conservation also helps directly to National Biodiversity Target 7 (NBT7), which is about the protection of genetic variation.
- His farm now has 200 different tuber varieties. Paddy (52 indigenous varieties), Cassava (tapioca-14 indigenous varieties), Greater Yam (34 indigenous varieties), Elephant foot yam (7 indigenous varieties), Colocasia (taro-47 indigenous varieties), Arrowroot (4 indigenous varieties), Sweet potato (15 varieties of which 4 are indigenous), Chinese potato (3 indigenous varieties), wild tuber crops (11 edible varieties which are otherwise gathered by tribes from dense forest), Turmeric (9 varieties of which 5 indigenous varieties), and Turmeric (9 varieties of which 5 indigenous varieties) are among other fruits and vegetables include Papaya, Pine apple, Passion fruit, Rose apple, Guava, Chillies (70 types, 17 ethnic), and Cowpea, Brinjal, Tomato, and Lady's finger. He also has a large collection of medical plants (17 unusual types).
- Mr. Shaji's significant invention was the 'Seed Pen,' a successful and environmentally friendly venture of a small entrepreneur, which serves as a great inspiration to other such innovators.



Photo by Parth Jeshi

CONSERVING RARE HIMALAYAN MEDICINAL PLANTS

MR. TOG CHAND, HIMACHAL PRADESH

Conservation of Domesticated
Species (*Individual*)

SPECIAL MENTION

AN OVERVIEW

Mr. Tog Chand, hailing from Salgram hamlet of Lahaul Spiti in Himachal Pradesh, has been an environment and social activist for several decades and his work has created a lasting impact on the lives of a large number of local people. He is recognised for his efforts towards greening of the mountains and enhancing local farm produce.

Mr. Chand was driven by the belief that conservation is important in order to maintain the ecological and environmental balance. Thus, he started ex-situ conservation of the endangered varieties like Wild Garlic, Kuth, Karu, and Patish, which he collected from the forests and grew on his conservation plot. However, his journey has not been easy and he had to overcome several hurdles including poor road connectivity and unfavourable weather conditions.

Mr. Chand's initiatives towards conserving indigenous varieties also includes creation of a "seed bank" for the distribution of these rare plant varieties to local farmers. It also includes developing a livelihood model that involves a direct sustainable trade of such medicinal varieties between farmers and companies through enterprises like Lahaul Medicinal Plants Society. The model serves the purpose of conservation and at the same time promotes livelihoods among the locals.

He has also organised various plantation drives to restore the degraded lands of the mountains and established an NGO named 'Lahaul – Spiti Paryavaran Suraksha Samiti' for this reason. It aims to promote restoration in Salgram hamlet and the neighboring valleys.

CHALLENGES

The necessity to conserve the indigenous species stemmed from the concern that these species were grown only on the small farms and unless intense conservation efforts were made, these species would gradually become rare and even become extinct. The farmers also lacked an incentive for the cultivation of medicinal plants in their fields because of lack of a market for these products. The challenges were intensified by poor road networks in the region and the unfavourable climate which created difficult working conditions. Mr. Tog Chand wanted to address this problem as this would aid in conservation as well as help the farmers financially. Another challenge that Mr. Tog Chand wanted to address was the destruction of the mountains' forests, necessitating rapid action to save the degrading lands.



FACING ROADBLOCKS

Mr. Tog Chand had identified the necessity of conservation, but he had to face several hurdles in order to achieve his goals. A lack of intensive farming practices exacerbated by the region's poor road connectivity and unfavourable weather conditions like snowfall that covers the farms for half of the year, impeded the conservation efforts.

In addition to these challenges, Mr. Chand also had to struggle against institutions like National Hydroelectric Power Corporation (NHPC). He discovered that a proposed hydroelectric project would harm around two lakh trees and wildlife in the neighbouring valley (Mini Manali), and the project was thus halted by the National Green Tribunal (NGT).



CONSERVATION ACTIONS

Mr. Tog Chand has taken several initiatives to conserve traditional varieties and also encouraged participation of his community in such initiatives, thus exemplifying the importance of a participatory approach in conservation.

- Mr. Tog Chand, to preserve and propagate traditional species, developed his own conservation plot for growing these species like wild garlic, Kuth, Karu, Patish, doop, naagchatri, ratanjoot, etc., which are of high medicinal value in pharmaceutical products like Chyavanparash. Many of these species, including Kuth, are highly endangered in this region.



- As a Community/Institutional Effort, he has maintained a 'seed bank' and collection of all the traditional crops and provides seeds to farmers and local community according to their needs and motivates them to grow medicinal plants.

- To enable afforestation in the degrading lands of the region, he encourages plantation drives in which he involves participation of youth volunteers, mahila sangathan and other community members. He has been able to plant a large number of fruiting trees which have had a remarkably high survival rate. His work with the forest department has resulted in Rs. 10,000 fine for tree felling in the area.

- Mr. Tog Chand has also helped develop a livelihood model that involves a direct sustainable trade of medicinal varieties between farmers and companies via organisations like Lahaul Medicinal plants Society. This trade has motivated the farmers and local community to grow such species on private land and thus, provides dual benefits of livelihood and conservation.
- He has also been working in close association with mahila sangathan members and youth volunteers to bring positive change in his community towards environment sensitization and encouraging their active participation.

Mr. Tog Chand's primary contribution has been towards spreading awareness among the local populace about conservation strategies and the importance of traditional plant types, which would enable the continuity of this conservation practice.



TOWARDS LONG-TERM SUSTAINABILITY

Mr. Tog Chand's vision and leadership have resulted in the greening of the mountains and the enhancement of local horticultural produce. His consistent efforts have immensely contributed towards the conservation of rare, endangered, and vulnerable plant varieties on the verge of extinction. He has successfully established a 'seed bank', through which he distributes seeds to local farmers and encourages them to plant traditional types in their farms. In addition, with the support of the Lahaul Medicinal Plant Society, a direct sustainable trade of farm produce has been established between farmers and corporations has been formed.

His NGO, The Lahaul – Spiti Paryavaran Suraksha Samiti, has been successful in conserving rare plants of the mountains covering 60 hectares of land. He has organised several plantation drives and encouraged participation of women and youth. The inclusion of women in his initiatives, led to their sensitization towards the environment. The women are now very active participants in decisions related to Jan, Jungle and Jamin (people, forest and land). They understand the importance of forest conservation for their livelihood.

His long-term vision includes restoration of dry areas such as Harsal, Sargal, Tindi, Surchand with the involvement of Mahila mandal and Youth mandal to improve soil quality and flora-fauna of the region. He now has a team of youth volunteers with him working towards conservation.

KEY LESSONS

- Two Sustainable Development Goals (SDGs) are directly benefited by this conservation strategy. SDG 13-Climate action and SDG 15: Life on Land. The conservation of wild variety also contributes directly to National Biodiversity Target 7 (NBT7), which is the protection of genetic diversity of cultivated varieties and their wild relatives.
- Recognising the value of traditional crop varieties and medicinal plants, the conservation of rare species resulted in a multi-fold greening of the mountain region.
- The development of seed banks was a major move towards conservation practice. The production of kuth in the region was raised to a certain extent because of its high demand by pharma companies. A key lesson here emerges about connecting conservation with sustainable commercial opportunities. Establishing direct commercial links can be beneficial in creating sustainable livelihoods for the local people.
- The inclusion of women and young volunteers in the programme was a commendable concept towards raising awareness and bringing about a positive change in society. It proved that participatory approach serves as the backbone of conservation efforts.





REARING RESILIENCE: CONSERVATION OF AN INDIGENOUS CATTLE VARIETY

AMRABAD PODA LAXMI GOVU,
SANGAM, TELANGANA

Conservation of Domesticated
Species (*Institution*)

WINNER

AN OVERVIEW

Poda Thurpu is a compact sized indigenous cattle breed found in the Nagarkurnool district of Telangana. It has traditionally been reared, bred and conserved by the Lambada community that had migrated from Rajasthan and settled in Nagarkurnool. Known for its distinct characteristics such as size, endurance to drought and migration capability over rugged terrain, they are also reared by Golla, Malla and Madhika community. This cattle breed is highly suitable in the context of climate change and ecosystem-based adaptations to climate change.

The communities dependent on this cattle species have shown exemplary grit and determination by resisting pressures to interbreed or artificially inseminate this breed against government directives. The breeders strictly follow 100 per cent natural selection. The Lambada community maintained large herds of Poda Thurpu by selectively breeding their animals.

After the Nallama forests were declared as Amrabad Tiger Reserve in 2014 there was an acute shortage of grazing pastures for the animals. This led to a severe neglect of these traditional breeds. In this backdrop, Amrabad Poda Laxmi Govu Sangam was created to save this indigenous breed from extinction and maintain the traditional system of maintaining purity of the breed. This thus stands out as an incredible example of collective community action towards conservation of traditional livestock breeds.

CENTURIES OLD PRACTICE

The Lambada community has engaged itself in the process of traditional rearing of Poda cattle without any external help for over 400 years as has also been documented by historical sources such as the Nizam's cattle grazing permits. Their practice of saving unique genetically distinctive breeds by using traditionally accepted good traits for breeding based on good and bad omens has led to a development of unique Poda cattle with distinctive characteristics such as climate resilience and ability to thrive in undulating and hilly terrains. These cattle have been known for their strength and endurance.

RECENT THREATS

The Poda cattle were facing multiple threats in form of loss of grazing grounds after creation of Amrabad Tiger reserve in 2014 and also the threat from modern processes of cross breeding of species. Pure strains of goats, sheep, horses, cattle, etc. have been lost due to cross breeding thus leading to a loss of faunal genetic pool. While much attention has been given to cultivar conservation of food crops, conservation of domesticated traditional breeds of animals has received scant attention. It was in this context that community action was taken to protect this species from extinction and conserving the pure genetic pool of this unique breed of cattle.



JOINING HANDS

The indigenous communities have engaged themselves in the preservation of unique genetically distinctive breed of poda cattle since generations but recognising the existential threat after the conversion of Nallama forest to Amrabad Tiger Reserve leading to loss of grazing pastures, a more systematic effort was made by Watershed Support Services and Activities Network (WASSAN). They started a project to support efforts towards saving this breed. A Breeders' Association named "Amrabad Poda Laxmi Govu Sangam" was created which maintains a nuclear herd of cattle with superior characteristics. This herd is considered sacred. Women are actively involved in the breeders' association. Also, the traditional community practices such as cattle festivals of Lambada and Golla community have aided the protection and conservation of this cattle breed. The local community does not allow breeding with non-Poda cattle and uses traditionally accepted good traits for breeding based on good and bad omens. The breeders strictly adhere to 100 per cent natural selection. Artificial insemination of this breed is not allowed by the local community despite government directives.

The funding support along with the Strategy and Action Plan prepared by the Telangana SBB also helped in the conservation efforts by the local community.

IMPACT AND OUTCOMES

Poda cattle are bred in 25 villages spread over five blocks of Nagarkurnool region of Telangana with an area coverage of 445 square kilometres. Over 350 families are engaged in the rearing and conservation of a pure variety of Poda cattle. The price of this breed has increased from 20,000 INR to 40,000 INR and the cost of breeding bulls ranges between 90,000-1,50,000 INR. Breeders having an agro-pastoral traditional knowledge system now support 15,076 herds of cattle.

The Telangana SBB has also submitted a proposal to National Bureau of Animal Genetic Resources to recognise Poda Thurpu as a registered breed. The Telangana state government has also instructed to stop artificial insemination of Poda Thurpu cattle with exotic and other species to protect the gene pool of these cattle. The ICAR-National Bureau of Animal Genetic Resources has recognised the cattle as a new breed of indigenous farm animals. All this has been possible due to the sustained efforts of the local community to conserve a unique traditional breed of cattle in its natural form. The conservation of Poda cattle is highly relevant not only for the uses it provides but also for their unique attributes which provide for ecosystem-based adaptations to climate change.



KEY LESSONS

The efforts of the local communities in maintaining the indigenous genetic pool of these cattle and adhering to their traditional practices despite various odds is worth appreciation. It can be used as a model to conserve other such domesticated species.

- This case study focuses on the innovative ideas and strategies adopted by local communities to build resilience against climate change impact. By breeding a resilient indigenous variety of cattle, the community extended their capacities to withstand extreme drought conditions.
- The engagement of women in this community-based initiative has been inspiring. It thereby contributes to the SDG Goal-5 of achieving gender equality.
- It is notable that the local communities recognised the need of scientific knowledge and approach for successfully maintaining an indigenous breeding practice.





REVERSING EXTINCTION FOR A SUSTAINABLE FUTURE

SAILULAK SIAL VULH ASSOCIATION,
MIZORAM

Conservation of Domesticated
Species (*Institution*)

SPECIAL MENTION

AN OVERVIEW

Mithun or Gaya/Sial, as it is locally referred to, is a unique large cattle species found in the North-Eastern part of India including the hill forests of Arunachal Pradesh, Tripura, Mizoram, Manipur, Nagaland, and Assam, as well as across the border in Bangladesh, Myanmar, and China. A hybrid of the wild gaur and the domestic cattle, Mithun is domesticated for its many uses including nutritious milk and its ability to draw wagons. Often referred to as the “Cattle of the Mountain”, a once abundant species that is now facing severe threats primarily due to habitat loss and also because rearing is an extremely complex task. Today, Mithun is a ‘Threatened’ species as per the Red List of International Union for Conservation of Nature (IUCN).

In a small village of Mizoram called Sailulak, an extraordinary task of saving the near-extinct Mithun was taken over by a few families. The village consisting of merely 206 families, formed the Sailulak Sial Vulh Association. They used their traditional knowledge for Mithun rearing which not only economically benefitted the community, but ultimately saved the Mithun from the brink of extinction. The traditional shifting cultivation practice of Jhum was also improvised to preserve the foraging grounds for the Mithun. This harmonized system resulted in the conservation of Mithun species with an increase in household income and at the same time, a decrease in the negative impacts of Jhum cultivation.



OVERCOMING THE OBSTACLES

There were multiple challenges faced by the people of Sailulak village. The village was ravaged by insurgency during the 1960s, bringing it disrepute and isolation. The village was further destroyed by rampant Jhum cultivation and loss of forest cover. Through a cascading effect, the Mithun population which held not only economic but also cultural and social significance was also steadily declining. In addition to this, there was an absence of alternate sources of livelihood. Thus, Mithun rearing was identified as an economically beneficial option while at the same time realizing that it also has to be saved from local extinction for their livelihoods to be sustainable.

CONSERVATION IN ACTION

It started with 5 families breeding and rearing Mithun which culminated in the establishment of Sailulak Sial Vulh Association. This association now has 46 families as a part of it. The Mithun rearing system was revived based on traditional practices thus preserving not only traditional knowledge but also the cultural system.

Grazing grounds are fenced in quarters which ensure the rotation of pastures providing them enough time to rejuvenate while ensuring that pastures are available for foraging throughout the year. The conservation initiative is based on the traditional system that prioritized living in harmony with nature. It revives the organic relationship between Mithun rearing and Jhum cultivation, where it is believed that lands grazed by Mithuns is more suitable for Jhum cultivation and after harvest such lands provide for good foraging grounds for them.

The community has also built vigilance/resting sheds and springs, thus bringing together both the traditional and modern systems to the best of their utilization. Along with this, water conservation initiatives are also taken up for an integrated conservation strategy.

The financial resources were initially provided by the local village council by Mizoram Rural Bank. Later an NGO supported them in providing expertise and

training related to veterinary care, vaccination, and medicines. The Rural Development Department also helped them in constructing cattle sheds, watch houses, watering holes, and salt licks for free-ranging Mithun. Biocene, an environmental NGO, also helps them with training. Other organisations such as BDO, RURBAN, FOCUS, DRDA also support them often.

The association is working closely with the National Research Centre for Mithun, Nagaland for a semi-domesticated modification to the process and also for the design and development of night shelters with food and water. The association also plans to build a water harvesting system that will support semi-intensive farming which they plan to start.



IMPACT AND OUTCOMES

The community has been able to raise the population of Mithun from almost negligible to 325 today. This is a successful example of community action using the traditional knowledge handed down to them by their ancestors for saving not only the Mithun population but also preserving their cultural practices of raising the animal. It has also led to economic prosperity in the village as the average annual income of members of the association has gone up from 4,000 to 400,000 INR today. This also led to successfully moving people away from Jhumming and prioritizing the conservation of commons. This is a great example of community action in preserving their natural flora and fauna along with living in peace and harmony with nature as was done by their ancestors.

KEY LESSONS

- The case study highlights the importance of traditional knowledge of the communities for effectively maintaining the Mithun population, for example, the synchronisation of the traditional practice of Jhum cultivation with the maintenance of the grazing grounds for Mithuns has led to the creation of a sustainable model of conservation. This practice of effectively maintaining the resource pool can be replicated in other parts of the region as well.
- Such management practices require trust and effective cooperation between the members of the communities which perhaps is one of the most important takeaways from this case study. The collective action of the families has been the most fundamental force behind the success of this intervention.
- The third-party intervention and seeking financial help from an external source have also helped the Sailulak Sial Vulh Association in the revival of the species. In this particular case the role of NGOs in providing expertise and training facilities related to veterinary care, vaccination and medicines has been exemplary.
- It is a wonderful example demonstrating community action to save a nearly extinct species using the traditional knowledge from their ancestors. The balance that the community has achieved between Jhum cultivation and restoring nature is commendable. Such initiatives should not only be replicated but also closely monitored and supported financially particularly in such geo-strategic locations such as Mizoram.



SUSTAINABLE USE OF BIOLOGICAL RESOURCES



The concept of sustainable use of biological resources is vital for the long-term survival of humankind and the maintenance of ecosystem functions. This is also one of the three main objectives of CBD. Article 8 (d) of the Convention expects the parties of the convention to promote the protection of ecosystems, natural habitats, and the maintenance of viable population of species in natural surroundings.

With an endeavour to honour the efforts promoting sustainable use of biological resources and efficient natural resource management in India, the 2020-21 Awards recognise four cases of individual as well as institutional passion and determination.

- Mr. S. Sathish is an exemplary Forest Range Officer who ignited the ecotourism potential of a coastal village in Tamil Nadu through concerted community-based efforts.
- Dr. Tara Devi, Himachal Pradesh is a case study focusing on the importance of wildedible plants and their nutritional value.
- Khonoma Nature Conservation & Tragopan Sanctuary Trust, Nagaland is an inspiring case study of India's First Green Village where the community took upon itself to conserve the magnificent but vulnerable bird- the Blyth's Tragopan.
- Krishi Avum Paristhitiki Vikas Sansthan (KRAPAVIS), Rajasthan is a case study of revival of the Orans, sacred village forests that are an important source of water and are rich in biodiversity.



PIONEERING ECOTOURISM IN A COASTAL VILLAGE

MR. S. SATHISH, FOREST RANGE OFFICER, TAMIL NADU

Sustainable Use of Biological Resources *(Individual)*

WINNER

AN OVERVIEW

Kaarankadu is a mangrove-rich village in Tamil Nadu with fishing as a primary source of livelihood for its people. Over the years, a severe drop in the availability of fish in the region due to increasing marine pollution along with ever-increasing cost of living deeply affected the income of the villagers. Their survival would further become backbreaking during the fishing ban period.

However, the location is also highly favourable for adventure tourism activities including boating, kayaking, snorkelling and scuba diving. Located in the fringes of Gulf of Mannar Marine National Park, it is rich in corals and sea-grass beds, even attracting Dugong, the rare herbivorous sea cow. Kaarankadu is a beautiful coastal village with abundant mangrove vegetation. Owing to the rich marine biodiversity of this mangrove village, the majority of the inhabitants rely on fishing for their day-to-day needs. However, over the years, the rising cost of living had made life difficult for them. To add to their problems, effluents from adjacent shrimp farms have been polluting the sea water, harming marine species and the overall ecosystem. This also reduced fish catch, further limiting the community's livelihood. During the fishing ban period, survival would become backbreaking for the community. This also forced a few fishermen to take tourists inside the seas illegally. Overall, the people of Kaarankadu village were surviving with a meagre income, inevitably looking upon additional income sources.

Upon taking charge as the Forest Range Officer at Ramanathapuram Forest Range, Mr. S. Sathish enabled a series of transformative actions to materialise the ecotourism potential of the village. With the active support and participation of the residents, he resurrected the barely functional Eco-Development Committee (EDC) in 2017 to involve the locals in conservation activities as well as to promote employment and sustenance-based programmes. Today, nature protection and livelihood co-exist peacefully in the village, reaping rich benefits of Sathish's consistent efforts in realising the ecotourism potential of the region.



OVERCOMING OBSTACLES

With a vision to reap rich benefits, Mr. S. Sathish began with involving the local communities to develop and operationalise an ecotourism facility in the village. However, he faced strong opposition from the villagers, who were hesitant to engage with the Forest Department due to the fear of losing their fishing rights in the area. He also faced resistance from those fisherfolk who were involved in illegal tourist boating.

To overcome these hurdles, Mr S. Sathish made persistent efforts to convince the locals and in this regard, he adopted an innovative approach by speaking to a gathering of 1000 villagers during a Church mass. He initiated dialogues with local villagers to convince them of the existing ecotourism potential of the area to help them earn their livelihood besides protecting the mangrove forests for ecological restoration. The villagers provided a green signal for establishing the facility and the initiative was finally begun by reviving the EDC. The local community joined hands with the Forest Department (FD) and an agreement was signed between the EDC and FD with a benefit sharing modality of 60:40 (EDC:FD) for income sharing.

By refurbishing the garbage disposal yard with funding from the Mangrove scheme and outside sponsorship, an eco-hut facility was built, setting the ground for the start of ecotourism in the area. Tourists were able to enjoy the region's natural beauty through activities like boating, kayaking, and snorkelling. They also have a small cafeteria where they serve authentic local seafood which has gained popularity for its taste.



FOR THE COMMUNITY, BY THE COMMUNITY

Sathish has involved the fishermen, the local women folk, as well as scientists from various organisations who considered fish and other marine flora and fauna as a lost cause before, he came to the scene. Sathish, as a forester, looks at fish and fishing from a positive outlook. He is considered an authority on dugong conservation and also on a wide spectrum of community-based conservation measures.

The ecotourism initiative has been established and made to run with utmost involvement of the local community in most of the activities. Apart from improving the local livelihood, the programme has developed in them a sense of responsibility and belongingness by making them run the facility. This contributes to long-term viability of the ecotourism initiative.

The EDC was revived under the leadership of a woman, with a membership of 300 locals, almost half of which are youth and 30% are women. Decisions regarding the day-to-day running and further plans are discussed during EDC review meetings which are conducted at regular intervals by the EDC executive committee and other members, in the presence of Mr. S. Sathish acting as the secretary, with support from other Forest Department officials.

Any infrastructure development in the facility, for example - construction of toilets, platforms etc are done by engaging the locals predominantly, thereby creating an opportunity for income generation.

A prominent feature of the initiative is the use of traditional fishing boats (Lambadi) for taking tourists on a boating experience. There are around 100-120 boats in the village with two fishermen for each boat. This has helped the fishermen to earn an additional income during off-duty periods and during a ban on fishing.

A young female member of EDC acts as the manager cum receptionist. The café at the facility is also run by local people and a washroom that was built is also maintained by the EDC and the income generated is used to employ local people for cleaning.



SUCCESSFUL PARTNERSHIPS

Mr. S. Sathish also facilitated to cater to various stakeholders for making the initiative a successful entity.

- Forest Department was the main partner with 40% share and it helped in making this initiative possible by providing active support to Mr. S. Sathish. They carried out mangrove plantation activities and also provided the necessary equipment and infrastructure like kayaks, life-jackets, walkways etc.
- An NGO called Arumbugal was engaged for awareness and capacity building of the local community regarding importance of nature conservation, environmental issues and specifically mangrove conservation. The NGO also made a micro-plan for the ecotourism initiative.
- Mr S. Sathish facilitated a visit by Executive Members to Gulf of Mannar Biosphere Trust (GOMBRT) to train the locals on the functioning of EDC thereby making them understand their roles and responsibilities.
- Other line departments like fisheries department helped with ensuring the safety of boats and marine police assisted with the local safety by patrolling. The tourism department helped with Woutreach by providing signage boards.

CONSERVATION AND SUSTAINABILITY INITIATIVES

Locals are extremely committed to regulating resource use in their community. They have been following appropriate procedures to ensure that the natural resource pool does not deplete for centuries. They only fish using traditional country (Lambadi) boats, keeping the rate of replenishment well within self-imposed limits of 2-3 hours per day, despite the lack of a scientific criteria. The harvesting of sea cucumbers has been prohibited in the area. They also deny outsiders from entering their area for fishing. All of these factors contribute to the food chain's integrity and, as a result, biodiversity.

Various conservation activities have been implemented by the forest department. Every year, five hectares of mangroves are planted to increase the area covered. The department has refused to renew the license of shrimp farms that polluted the area by releasing their effluents. Using an outsourced cultural team, Mr. S. Sathish also assisted in conducting various awareness drives among the residents on sustainability, plastic pollution, marine pollution, solid waste management, and other topics.





IMPACT OF THE INITIATIVE

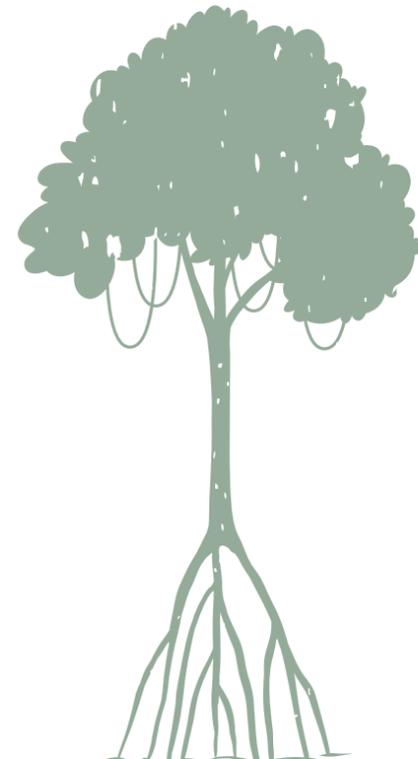
The establishment of the eco-tourism initiative has largely helped the local fishermen community to earn their livelihood as well as contribute to the conservation of mangrove forests in the area.

- The annual mangrove plantation activities conducted by the Forest Department contribute towards maintaining the water quality in the area as mangroves filter the sediments and other pollutants through their roots. They also help to reduce the effect of cyclones and other natural disasters.
- The local community earns an additional income by engaging tourists in experiential activities such as boating, kayaking and snorkelling. Overall, each of the 300 families has been able to generate an additional income of at least INR 3000 in addition to their fishing income.
- The initiative also benefits the locals through the sale of products to tourists that are made by adjacent EDCs and residents.
- The area is emerging as a thriving adventure tourism hub where tourists get to experience boating, kayaking and snorkelling. They also get to taste authentic local seafood at a small cafeteria run by the local community.
- The ecotourism initiative has also helped greatly in creating awareness regarding nature conservation among the locals and tourists.



SOURCE OF FUNDING

The income generated from the operation of the facility is utilised for further improvement of the establishment. The facility receives a fund of Rs 2,00,000 from the Wild Life Warden (Forest Department) every year. A grant of Rs 5 lakhs was provided by Tamil Biodiversity and Greening project. The District Collector, after visiting the facility and impressed by the initiative, sanctioned a fund of Rs 70 lakhs for infrastructure development.



KEY LESSONS LEARNT

- This initiative has demonstrated how a young dynamic forest official can alter the lives of local people as well as protect the ecological setting, resulting in a win-win situation. Mr. S. Sathish, Forest Range Officer, has taken a fantastic step in resurrecting the non-functional EDC and including them in ecotourism activities such as fishing and boating, which is also a traditional way of life.
- The success of the ecotourism initiative also lies in the involvement of the local community in ensuring its smooth functioning. They are passionate about regulating the use of biological resources available in their area. It has given the local people a sense of responsibility and belongingness in running the eco-tourism facility.
- The ecotourism facility has also paved the way for indirect benefits such as improving small businesses in the locality like sale of handicrafts, snacks, shells, crabs etc thereby further enhancing livelihoods.
- The ecotourism effort has also aided in raising environmental awareness amongst residents and visitors.
- Strong participation of women is another key highlight of this initiative, and it might contribute significantly towards ensuring the long-term viability of the initiative.

WAY FORWARD

- Building further on the local community's active participation, the EDC plans to enhance the service through better infrastructure facilities and by engaging school and college students for study or research so as to strengthen the establishment scientifically.
- The ecotourism initiatives can be replicated in the buffer zones of protected areas since they provide major benefits to the local community and visitors as well as contribute to conservation of the area.





SECURING NUTRITION WITH TRADITIONAL KNOWLEDGE

DR. TARA DEVI, HIMACHAL PRADESH

Sustainable Use of Biological
Resources *(Individual)*

SPECIAL MENTION

AN OVERVIEW

Wild edible plants (WEPs) refer to edible species that are not cultivated or domesticated. WEPs have a key role to play in poverty eradication, food security, diversification of agriculture, income generation, and alleviating malnutrition. WEPs are one of the alternative sources of healthy and nutritious food, and they are crucially important in supporting the global food basket in all parts of the world. Dr. Tara Devi began her career in 2007 as a project manager for the Mid-Himalayan Watershed Management Project, which aimed to improve the five primary components of water, forests, land, animal, and human health. Her work raised awareness about the importance of wild edible plants, their nutritional value, and how to conserve them through sustainable harvesting techniques with active support from SHGs, students and communities.



AN IDEA TAKES SHAPE

During her early research work, Dr. Tara Devi read about the wastage of wild edibles due to lack of knowledge, storage facilities, and processing techniques. It made her think about the potential of these plants for feeding a growing population and overcoming malnutrition. This motivated Tara Devi to work on this issue on ground level and led to her PhD work on *"Assessment and Conservation Prioritisation of Floristic Diversity for the Socio-Economic Development of the Rissa Khad Watershed in Central Himachal Pradesh, North Western Himalaya"*. Through her work, Tara Devi is paving the way for the conservation and sustainable use of the wild edible plants of Himachal Pradesh. Her work raised awareness about the importance of wild edible plants, their nutritional value, and how to conserve them through sustainable harvesting techniques among SHG students and communities.



ROADMAP TO SUCCESS

Dr. Tara Devi read about resource wasting of wild edibles due to a lack of knowledge, storage facilities, and processing, and how working in this area could help to feed the expanding population and combat starvation. This inspired her to take action on the ground and whatever she did was for the betterment of the community in one way or another. For easy access to the WEPS of the Western Himalayas, she created www.himalayanwildfoodplants.com, that is also called as an encyclopaedia of Western Himalayan wild edible plants. Her work focuses on community capacity building and entrepreneurship in rural areas.

She is very engaged in community awareness through various social media platforms, and she runs a YouTube channel where she provides information on plant resources, local culinary recipes, traditional knowledge, and spiritual beliefs of her region and its people. Dr. Tara Devi's entire journey depicts broad knowledge of local wild plant protection, whether through plantation drives, her website, training, or workshops. Her website is an excellent resource for anyone interested in learning more about wild edible plants. The website not only provides information about the plant, but also explains how to harvest each plant in a sustainable manner.

Speaking of challenges, she says, "When a woman wants to do something, everybody will have a problem." Just like anybody else, she also faced objections from her colleagues, and had delays in getting permissions, etc. However, she was

determined to go ahead with her initiative. She also had the support of people outside her circle who appreciated her work and motivated her to keep going. Despite confronting numerous hurdles at work and in the field, Tara Devi has laboured and continues to strive for the conservation of wild food plants. She intends to generate additional nutritional documentation in the near future, and she sees a lot of research possibilities in wild edible species. Apart from this, she wants to upgrade and maintain her website, which now lists 181 wild edible species and contains detailed information about them. But she will undoubtedly continue to educate people, particularly future generations, about the need for conservation.



THE UPSHOT

Through her initiative, Ms. Tara Devi has identified wild edible species available in the high-altitude regions of the Western Himalayas as well as the forms in which they can be grown and eaten. She has created awareness among the local community and students about the importance of wild edible plants and ways to conserve them. Her aim has been to document the nutritional value of edible plants and create synergies between traditional and scientific knowledge. Her efforts have resulted in the publication of a book titled "An Illustrated Guide to some wild growing food plants of the sub-Himalayan region" and the establishment of her website.

She has also created many Self Help Groups (SHGs) through her initiative and revived dormant ones. More than 150 SHGs are actively involved in her initiative. She has facilitated the preparation of People's Biodiversity Registers (PBRs) for the Bhanbard and Barto panchayats of Mandi district, Himachal Pradesh and prepared a documentary on the process of developing People's Biodiversity Register. Her area of work has also expanded outside the Mandi district to areas such as Joginder Nagar, Kangra, Kullu, and Palampur. She trains students on identification of wild edibles and their nutritional benefits through workshops and seminars. Ms. Tara Devi also maintains a nursery of wild edible plants that are threatened or endangered in the wild such as the Moringa plant and she actively plants them during regular plantation drives as well as distributes them to the local community. Alongside this, she has

developed a seed bank wherein she maintains Diaspora species such as Diaspora pentaphyla, Moringa, Bhiringraj) that are collected from the wild and also through domestic cultivation.

She actively uses social media to raise awareness among the larger community regarding conservation and sustainable development. Through her YouTube channel, she provides information on plant resources, local food recipes, and the traditional knowledge and spiritual belief of the local people in her region. She is currently working on a project titled "Traditional Processing of WEPS of six tehsils viz. Kotli, Mandi Sadar, Sunder Nagar, Padhar, Joginder Nagar, Thunag & Mandi District of Himachal Pradesh, their Medicinal, Nutritional & Economic Potential Plus Value Addition by Analysing Scope for Latest Processing Techniques" funded with an amount of ₹6.4 lakhs by the Department of Environment, Science and Technology, Government of Himachal Pradesh (DEST-HP). She also runs a non-Governmental organisation called Rise Up Foundation. The Minister for Rural Development & Panchayati Raj of the Government of Himachal Pradesh honoured Dr. Tara Devi for her active involvement in the preparation of the People's Biodiversity Register of Mandi district during the COVID-19 pandemic. She was also honoured by the INTACH Mandi Chapter for her work on the conservation of traditional knowledge related to wild food plants of Mandi.

THE ROAD AHEAD

The initiative is a great example of capacity building and entrepreneurship of the local community. Ms. Tara has planned more workshops for the students and the local community and also actively uses social media to spread the message of sustainable use of resources. She is also an invitee to a number of events in which she creates awareness regarding the wild edible plants of the Himalayan region. Her work has produced a number of valuable resources such as the website, books, research papers, videos, and talks, both for the locals and the community at large.

The key lesson is how such identification and documentation of natural resources can help immensely in preparing People's Biodiversity Registers further leading to conservation and sustainable use of biological resources. It also provides livelihood to the local community wherein they can use their local knowledge to enhance their livelihood as well as contribute to conservation. Capacity-building and motivation of key stakeholders of natural resources in a region can help conserve both biodiversity and the associated traditional knowledge. This initiative can be replicated in other regions of the Himalayas since it is a storehouse of valuable natural resources and ecological knowledge.





THE RESURRECTION OF A LOST BIRD

KHONOMA NATURE CONSERVATION AND TRAGOPAN SANCTUARY TRUST, NAGALAND

Sustainable Use of Biological Resources *(Institution)*
WINNER

AN OVERVIEW

The dwindling population of Blyth's Tragopan, the state bird of Nagaland, has been calling for conservation and sustainable use of forest resources. This magnificent bird is listed as 'Vulnerable' in the IUCN Red List of Threatened Species.

Khonoma village is located about 20 kilometres away from the capital, Kohima and is known for its rich biodiversity. It houses 21 restricted-range species, thereby earning the distinction of being a part of the Eastern Himalayas Endemic Bird Area (EBA). For the Angami tribe, the inhabitants of Khonoma village, hunting had been a sacred cultural practice. However, when the very existence of Tragopan in the village became a matter of question, an incredible change took shape. The centuries' old hunting practice was put to stop by the tribe elders and community leaders by sensitising the hunters. This timely and active intervention of the community laid the road for the conservation of the bird species.

Consistent efforts, able leadership, visionary thoughts of the village council and the community leaders to involve local people in the conservation initiative through perseverance and grit, led to the demarcation of 20 square kilometres of Khonoma Forest as Khonoma Nature Conservation and Tragopan Sanctuary (KNCTS). It has since spread over 123 square kilometres including the Community Conserved Area (CCA). KNCTS also has the distinction of being the first-ever community-led conservation project in India.

CHALLENGES ADDRESSED

Nearly after a decade of exemplary conservation efforts, the village has been recognised as the 'First Green Village in India'.



Although the customary hunting competitions specifically, of the famed Blyth's Tragopan, triggered the need for conservation efforts, the KNCTS and its extended community reserve area had underlying ecological issues. Years of unsustainable and unregulated activities such as jhum cultivation, extractive practices of timber and fuelwood collection had adverse impacts on this biodiversity hotspot lying in the Eastern Himalayas. It led to significant soil erosion, landslides, degeneration of forests and severely led to the depletion of the ecosystem services provided by the landscape. It also affected the livelihood activity of the locals, which led to the need to reverse the negative changes happening to the ecosystem. Consequently, restoration of the lost forest ecosystem was guided by sustainable practices involving community members which also provided for a livelihood.



ACTIONS TAKEN

The village elders realising the fallout of the unsustainable community practices initiated the process of restoring the forest ecosystem in the early 1990s. It involved communicating the long-term gains of conservation, whereby experts were invited to impart conservation values to the village community at large and the involvement of the State Forest Department. The elders also campaigned to ban specific activities, notably hunting of Blyth's Tragopan, which is a key indicator of habitat condition. Remarkably, the enforceable bans were not limited to hunting and felling, but also jhum cultivation. The incorporation of these actions led to the restoration of the natural forest, which earlier was highly degraded and fragmented. Strong decentralised management, starting with the Village Council and subsequently the Biodiversity Management Committee helped initiate sustainable practices that are being continued. It included harvesting for NTFP (Non-Timber Forest Produce) such as wild edible fruits at a sustainable level and preventing their commercialisation. Further, fishing using chemicals and batteries that have a detrimental effect on the habitat have also been banned in the stream of the CCA.

MOBILISING RESOURCES

The Khonoma Nature Conservation and Tragopan Sanctuary Trust (KNCTS) is partly facilitated by the Ministry of Environment, Forest & Climate Change (MoEFCC) under Integrated Development of Wildlife Habitat Project. Multiple organisations such as The Centre for Environment Education (CEE), North East Regional Cell, Aranyak and EQUATIONS assisted capacity-building programmes for the villagers. Most notably, awareness programmes on conserving Tragopans and flora and fauna surveys were supported by CEE and Aranyak. Equally, the Village Council mobilized an additional funding system through voluntary contributions from community members, including SHGs (Self Help groups), Unions and well-meaning individuals. Additional funds are also raised through enforcement of a strict penalty system where the penalty ranges from 300-3000 INR.



SECRETS OF SUCCESS

- Having a well-defined area as a protected area in the form of KNCTS under the Wildlife Protection Act, 1972.
- The usage of Blyth's Tragopan as a flagship species to pursue habitat conservation and increase involvement of local people in conservation.
- A sustained dialogue process on long term conservation goals initiated by the village elders. It helped change the perceptions of the Angami tribe from former hunters to protectors of Blyth's Tragopan.
- The practice of sustainable agriculture recognises their traditional practices in the form of indigenous paddy cultivation that utilizes Alder trees. In this regard, alder trees are lobbed instead of felling followed by burning which is practised in a standard Jhum cultivation. It allowed the collection of the lobbed parts as fuelwood and the alder trees supplements the cleared land nutrients for the period it is kept fallow.
- Institutional structure at different levels, Biodiversity Management Committee, Nagaland State Biodiversity Board and Local Village Council working together actively by ensuring the conservation and protection of KNCTS.



KEY IMPACT OF THE INITIATIVE

The project has significant impacts on India's endeavour to conserve its biodiversity and the upcoming post 2020 global framework. It is also related to the sustainable development goals (SDGs) and India's NBT (National Biodiversity Targets) which is aligned with the previous Aichi Targets. For instance, the notification and subsequent increase in the overall area contributed to NBT 6, SDG 15.2 and Goal A of the post 2020 framework. This calls for effective equitable conservation of ecologically representative areas of the country. The thrust on alder-based paddy cum cultivation has contributed to increasing the resilience of the agricultural land which earlier followed jhum cultivation that was damaging to the overall health of the land. This action serves the twin purpose of meeting to an extent, the targets under NBT 3, NBT 5, NBT 11 and correspondingly SDGs 3, 12.2, 2.4 and 11. The Angami elders' timely initiative of raising awareness among the village youths and community members concerning the preservation of Blyth's Tragopan directly contributed to NBT 1 and SDG 15 and 17. It is also notable that the institutions involved in managing KWST have mainstream biodiversity conservation in their activities which corresponds to NBT 1 and SDGs 11, 12, 13, 16. Moving forward, the collective action of Khonoma village lays down a base for ensuring that by 2050, the shared vision of "living in harmony in nature" is on the road to fulfilment.

KEY OUTCOMES

- The restoration process initiated by the elders and continued subsequently by the younger generation showed an increase in the bird sightings, most notably, 300 Tragopan birds and other vulnerable species such as Asiatic black bear.
- It also promoted ecotourism in the form of homestays and local youths' involvement in specific activities. Some of the prominent homestays include Hill View Homestay and Megoki that have provided a source of alternative livelihood for Khonoma's village. More specifically, the bird enthusiasts' beeline for the KNCTS due to increasing sightings was an opportunity for the local youths in their role as nature guides and birders.



VALUABLE LESSONS

The Khonoma Nature Conservation and Tragopan Sanctuary Trust (KNCTS) is partly facilitated by the Ministry of Environment, Forest & Climate Change (MoEFCC) under Integrated Development of Wildlife Habitat Project. Multiple organisations such as The Centre for Environment Education (CEE), North East Regional Cell, Aranyak and EQUATIONS assisted capacity-building programmes for the villagers. Most notably, awareness programmes on conserving Tragopans and flora and fauna surveys were supported by CEE and Aranyak. Equally, the Village Council mobilized an additional funding system through voluntary contributions from community members, including SHGs (Self Help groups), Unions and well-meaning individuals. Additional funds are also raised through enforcement of a strict penalty system where the penalty ranges from 300-3000 INR.





LET ORANS THRIVE AGAIN!

KRISHI AVUM PARISTHITIKI VIKAS
SANSTHAN (KRAPAVIS), RAJASTHAN

Sustainable Use of Biological
Resources (*Institution*)

WINNER

AN OVERVIEW

An integral part of Rajasthan's culture, the *Orans* are sacred village forests that are an important source of water in the form of small springs, ponds, and rivulets and are rich in biodiversity. Floral diversity of *orans* constitutes dhak, kadamb, keekar, khair, and guggal, etc. which are used by local people for food, fodder for livestock, and medicines. Sambhar, nilgai, wild pigs, and peacocks constitute the faunal diversity of Orans. They serve as a source of water and pasturelands, and people use these places for cultural gatherings, festivals, and other social events. Communities practicing agro-pastoralism are dependent on these Orans for centuries. But now, these orans have undergone degradation and are severely under threat.

SHRINKING OF ORANS

The main reason for the degradation of *Orans* is the exclusion of local people from their management. The panchayats showed little or no interest in their conservation and restoration. Traditionally, the *Orans* were looked after by village institutions called 'Thain', but the arrival of modern institutions like panchayats and subsequent disintegration of 'Thain' had led to little or no maintenance of these *Orans*. The decline is also attributed to the weakening influence of religion with the spread of modern civilization and legislation. With various threats like mining, quarry, encroachment, clear-felling, and other depletive factors, the *Orans* are in dire need of conservation.



KRAPAVIS – THE HOPE

Krishi Avam Paristhitiki Vikas Sansthan (KRAPAVIS), an NGO formed in 1992, stretched its hands to conserve the Orans, which are an integral part of the culture and were left to be degraded due to a lack of awareness, legal and illegal mining, and urbanization. KRAPAVIS, along with support from the local community, rescued the Orans contributing to the sustainability of livelihoods, and protecting and restoring the glory of the highly biodiverse areas of Rajasthan. This organisation undertook various activities including creating awareness, preparing an Oran Atlas, formation of Van Samiti, and the Oran Forum implementation, etc. Today, there is a cadre of over 500 rural women and youths who are associated with KRAPAVIS. Their hard work has brought fruitful results with an increased number of Orans leading to protection of the numerous associated flora and fauna.

KRAPAVIS is supported by the Rajasthan SBB as well as the State Forest Department in its conservation activities. It also receives funds from various National and International organisations. The state universities also collaborate with KRAPAVIS for research purposes.

CHALLENGES ADDRESSED

For the past few years, the major threats to orans are degradation due to legal and illegal mining. Recognising Orans in the revenue land category and allotment of these sites for the industries were a major setback for the conservation of Orans. Encroachment and extension of farmlands in the Orans are also hampering the community's conservation efforts. Power giants plan to set up a power grid without consulting the local community, but since villagers are dependent on these Orans for their livelihood, it is imperative to conserve them. Not just for humans, but these are crucial for livestock too, due to a large number of people practicing agro-pastoralism. KRPAVIS has engaged and assisted the pastoral communities in the conservation and restoration of Orans' biodiversity. They work towards a clear mission of betterment of ecological, agricultural, and livestock practices for the sustainable livelihood of the rural pastoral communities.



ACTIONS TAKEN

KRPAVIS addresses the environmental management and sustainable livelihood problems by undertaking conservation and management measures on these lands (Orans) by reviving traditional water harvesting structures, checking soil erosion, plantation as well as tree nursery raising, sowing grass seeds and planting saplings of those species that used to be present in Orans. One of the most significant features of the conservation effort is the role of communities as the prime actors in the conservation of these Orans.

Krapavis took major actions by initiating the community awareness programme and involved the local people in the conservation of orans. They documented the diversity of 100 orans in "Oran Atlas" and also came up with "Oran Novel" for local people and members of KRPAVIS to guide them for conservation. Panchayats were sensitized to take initiatives to protect the Orans. The NGO has also laid down a set of rules for the local governance and management of the Orans called 'Gram Stariya Sanghatan Niyamavali'. Construction and repair



of Oran 'taalaabs', water harvesting structures, and trenching units on the Orans land was aided. Sustainable farming and low external input agriculture (e.g., compost, vermin-compost, seeds of local traditional varieties, traditional mixed cropping systems, bio-pesticides, etc) was promoted. The documentation of endemic species of Orans was done and native seed banks, tree nurseries were maintained. For studying composition of flora and fauna, detailed GIS mapping of 100 Orans was carried out. Key motivators from the village were identified and opportunities were provided to them to be resource persons for Oran management in other areas.

KRPAVIS reaches out to people in various ways and one of the most important channels being the newsletter/bulletin named "Devbani Re Baat" which is a quarterly publication. Its content which comprises the results of the research, resource materials, case studies, feedback, drawings, stories etc inspires more people to take part in this great chain of conservation initiatives.



SIGNIFICANCE OF CONCERTED COMMUNITY EFFORTS

Without the concerted efforts by the communities, the Orans would have continued to be lost through a gradual process of degradation if they were not recognised and used and, till they cannot be used as bio reserves. The initiative would not have been successful without the support of local communities. Therefore, most of the staff members are from rural settings, contributing invaluable local knowledge, local socio-economic concerns, and policy issues. Today, there is a cadre of over 500 rural women and youths who are associated with KRPAVIS. It facilitates community actions and capacity development leading to the conservation of biodiversity and cultural heritage while supporting sustainable resource utilization of the invaluable Orans.

KRPAVIS created the Van Samitis to formulate the rules and empower them to enforce these rules for the long-term sustainable development of Orans. These rules are recognized by Joint Forest Management Committees (JFMCs), Biodiversity Management Committees (BMCs), and Self-Help Groups (SHGs). Special emphasis is put on training women and supporting their role as managers of natural resources, both, in these committees and beyond. The Honourable Supreme Court (SC) has given a ruling that Orans should be declared as being 'deemed forests'. Another important element of KRPAVIS and its work is related to conducting research and surveys on Orans in Rajasthan. Aiding the realization of SDG 7 on the clean, reliable, and sustainable energy source, distribution of solar lights to those dependent on the orans was facilitated. This reduced the demand for fuelwood, thus, helping in conservation of the orans and maintaining the vegetation cover.



IMPACT AND OUTCOMES

- Prior to KRAPAVIS entering the picture, the local communities lacked a sense of ownership over the sacred forests, and their active participation in the conservation activities was not a common scenario. KRAPAVIS empowered the local communities by expanding their administrative and managerial abilities, thus filling a void in leadership and information on community rights. Several years of commendable work by KRAPAVIS with the help and support of the local communities has been fruitful.
- Around 200 degrading Orans that covered large pieces of ecologically critical ecosystems have been restored.
- By engaging government officials, the organisation has ensured recognition of Orans under Rajasthan's Forest Policy, 2010, and for laying down provisions to create a directory of Orans.
- A clearer picture of the floral diversity of Orans is of great significance. The conservation status of the flora has been recorded and different ways are being planned to improve the present situation. This will help in ameliorating their carrying capacity so that utilization levels are sustainable. With financial assistance from 'Global Giving', a small tree nursery is being grown with 5000 saplings of suitable agroforestry species. Declining and dwindling species are prioritized, on which the elderly locals can provide information, in addition to records, gazettes, and published/unpublished material. KRAPAVIS has selected tree species that could provide 4 E-driven benefits: 1. Ecology 2. Employment 3. Energy 4. Economics.

VALUABLE LESSONS

- Building and strengthening the local institutions (e.g., Van Samitis) and giving them the power to enforce the conservation measures would help achieve sustainable management targets. This bottom-up approach to conservation by means of decentralization (NBT 10) facilitates equitable participation in biodiversity-related decision-making and ensures the rights of local communities (Post-2020 GBF Target 20).
- In light of ensuring sustainable production and consumption patterns (SDG 12) along with the need to conserve and make the most of traditional knowledge systems (NBT 11), steps like promoting sustainable farming and low-input agriculture (e.g., compost, vermicompost, seeds of local traditional varieties, traditional mixed cropping systems, bio-pesticides, etc.) would ensure sustenance of the traditional practices. Community-based Forest ecosystem conservation would support sustainable pastoralism and the collection of Non-Timber Forest Produces (NTFPs).
- Realization of NBT 11 on traditional knowledge systems can be strengthened by consulting the elderly locals in the community regarding the nursery species for distribution would also help preserve and promote the traditional knowledge. Encouraging ethnoveterinary practices would also help preserve the traditional knowledge.
- Continuous and collaborative action would expand the scope and diversify activities for reviving the important ecological and cultural heritage sites. This kind of advocacy enables communities to maintain their rights to the land and continue protecting the biodiversity sites as in the past.

THE ROAD AHEAD: AN OATH FOR ORANS

KRAPAVIS and the locals have undertaken Oran conservation initiatives with perseverance and good leadership. This has been based on a dual sensitivity to biodiversity and social issues. Oran protection and water management seem to have been recognized to provide a new lease of life. Orans have become miniature heavens of crucial bioresources and wildlife.

Despite the Supreme Court's ruling on Orans, there is very little progress on awarding the Orans their deserved status. Therefore, KRAPAVIS aims to assure the demarcation and accounting of Orans in deemed forests by the State government.

KRAPAVIS, teamed with the locals, looks forward to developing a replicable model of conservation and sustainable utilization of Orans. The organisation also wants to collaborate with other NGOs and organisations in light of expanding their scope and diversifying the conservation activities in order to revive one of the most important ecological and cultural assets of Rajasthan.



REPLICABLE MECHANISMS OF ACCESS AND BENEFIT SHARING



In its efforts to achieve one of the key objectives of CBD, an important aspect of India's unique BD Act, 2002 is related to providing legal access to local bioresources that are looked after by local inhabitants. The BMC and Panchayat may or may not, give outsiders permission to access their own treasured wild or domesticated bioresources.

The BD Act, 2002 ensures that if the BMCs/ Panchayat gives an external agency access to their bio-resources, the benefits obtained from the use of genetic resources are shared in a "fair and equitable way" with indigenous and local communities that possess the traditional knowledge regarding its use. This includes traditional cultivars or livestock breeds, plants for pharmaceuticals, cosmetics, gums, resins and even faunal species for their parts.

While India has been able to comply more than adequately with most of the requirements of the CBD and the BD Act, 2002 our response to the ABS agreements are still low. There are select good ABS case studies which can increase awareness amongst the local communities about their rights over access to prevent unauthorised use.

The award aims at honouring individuals/ institutions whose projects augmented noteworthy monetary and/or non-monetary equitable sharing of benefits out of the utilisation of biological resources with communities and stakeholders concerned.

- The case of Valagro Biosciences Limited, Telengana is a story of a company which actively engaged farmers and locals as important stakeholders in the ABS process.
- The case of Twichin Gram Bari BMC, Tripura is a story of convergence of goals of various stakeholders.



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THE REAL VALUE OF SOIL

VALAGRO BIORESOURCES LTD.,
TELANGANA

Replicable Mechanism under ABS
WINNER

AN OVERVIEW

The BD Act, 2002, envisages a mutually beneficial relationship between grassroot societies and businesses engaged in use of bioresources and traditional knowledge. Valagro Biosciences and Telangana farmers have demonstrated how Access and Benefit Sharing (ABS) can achieve this vision. Valagro Biosciences Ltd was successfully able to obtain resources for its research, and shared financial benefits while effectively sharing its research with the villagers.

Valagro Biosciences Ltd, located in Hyderabad, is one of the leading companies involved in producing and commercialising bio stimulants, biofertilizers and biocontrol products. It has a mandate to improve agricultural systems through sustainable agricultural development based on its own technologically innovative practices. Valagro Biosciences has a research and development facility to investigate options to enhance methods that help farmers get better yields from their crop lands. The company actively engaged farmers and locals as important stakeholders in the ABS process.



BIORESOURCE ACCESSED

Their research was conducted for the purpose of investigating the soil properties from 11 village agricultural lands from 3 districts of Telangana. The process required the use of rhizosphere soil and other plant material from a variety of crops. Valagro Biosciences needed access to soil from fields of farmers in order to carry out research and develop agro-industrial marketable products, based on mycorrhiza.

Rhizosphere soil microbes were required to develop bio stimulants for agricultural crops. The soil sample was accessed from the roots of the high yielding variety rice crops grown in farms that used compost as bio-fertilizer.

The site of the Valagro laboratory is in an industrial belt outside Hyderabad city. The company took prior permission from the NBA and focused on inclusivity by carrying out deliberations between panchayats and the locals, which helped farmers of 11 neighbouring villages from 3 different districts of Telangana better understand the purpose of collection of bioresources.

Six legally binding agreements were officially signed with NBA initially for Research and Development. Eleven agreements were made with the NBA for commercialization of these bioresources. Access and Benefit Sharing mechanism was negotiated with the panchayats and soil samples were obtained.



CHALLENGES ADDRESSED

Valagro Bioscience Ltd. applied to the NBA for collecting soil samples for the purpose of commercialization of bio-resources and initiated their work in the year 2017. The Access and Benefit Sharing mechanism was negotiated between the company and a group of village panchayats for accessing soil from their fields for research and development.

As a result of this collaborative approach, Valagro Biosciences Ltd. paid a benefit sharing amount of Rs. 28.7 lakhs. The Valagro Biosciences Ltd. has given an amount of Rs. 28.7 lakhs as equitable sharing to the NBA. Out of which NBA has transferred ABS money of 26 lakhs as per rules to the Telangana State Biodiversity Board. The SBB has further shared Rs 25.7 lakh with all 11 BMCs from where the bio resource was collected amounting to Rs. 2.34 lakhs.

The amount received by the Biodiversity Management Committees (BMC) from this company through the Telangana Biodiversity Board and NBA was utilised for activities such as village development works, and awareness and conservation efforts by setting up of a Biodiversity Park, a butterfly park, medicinal plant parks, benches, display boards, and wall paintings on biodiversity. Some amount of money was also used to promote education through the purchase of computers for schools, and a setting up of a library at the Panchayat office. Livelihood opportunities were also created through the purchase of a Leaf-plate making machine. Local farmers whose agricultural crops and soils were utilised were also directly benefited.



BRIDGING THE GAP THROUGH NON-MONETARY BENEFIT SHARING

The company gave the locals an informal understanding of benefits such as a percentage share of income based on the success of the product in the market. The company took the initiative to explain the concept of the work to the BMC members through a PowerPoint presentation to ensure its thorough understanding. The company took the initiative to explain the concept of the work to the BMC members through a PowerPoint presentation to ensure its thorough understanding.



RESEARCH RESULTS- ENJOYING THE FRUITS OF COOPERATION

The company successfully developed two bio stimulants and launched them in the Indian market at the Future Farming Event, 2019.



CONCLUSION AND POTENTIAL FOR SCALING UP

Success of ABS depends on dialogue between communities and businesses; hence such good practices can be used as models that can be replicated. Research that directly impacts community livelihood garners cooperation of locals. Effective communication of scientific results to the local community through comprehensive presentations is an effective way to take the community on-board and keep them involved in a productive manner.

The potential for scale up depends on the monetary value of the bio resource present in a particular state. For example, Andhra Pradesh collects several crores in ABS, and most of this amount comes from use of red sanders. Whereas states such as Bihar are able to collect only a few lakhs for ABS.

Non-Monetary ABS alternatives can be explored. Options such as joint Intellectual Property rights between the company and BMCs, and training of bright students from the community and nurturing them in high skills R&D through scholarships and internships can be explored.



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BEND IT LIKE BAMBOO!

TWICHIN GRAM BARI BMC, TRIPURA

Replicable Mechanisms of Access and
Benefit Sharing

WINNER

AN OVERVIEW

Twichin Gram Panchayat is a small village of roughly 840 hectares located in Khowai district of Tripura. Around 97 per cent of the population in the village are tribals. In 2015, the village community constituted its BMC to address the challenge of securing equitable local livelihood while ensuring sustainable use of biological resources. The livelihood associated risk of human-wildlife conflict was also a key concern.

The Twichin Gram Bari BMC took the challenges head on, with a collaborative approach. The BMC successfully signed an ABS agreement in 2016 for the sale of two key varieties of bamboo, the use and sale of which is the source of livelihood of the local community. The locally grown bamboo is chiefly used in the manufacturing of umbrella handles and bag handles. In this context, the BMC in collaboration with their local Joint Forest Management Committee (JFMC) and the State Forest Department fixed a minimum selling price of around INR 2.00/ piece for the umbrella handles and INR 1.50/piece for bag handles. The BMC also seeks to explore other avenues on ABS agreements for other bioresources found in their village.

CONVERGENCE OF CONTRADICTIONARY GOALS

The village of Twichin faced a unique challenge of contradictory goals with respect to different stakeholders. Firstly, the local people, living on the forest fringes and mostly reliant on Minor Forest Produce (MFP) such as bamboo and wild cardamom, faced the problem of inaccessibility to reliable market linkages to sell their produce profitably. Secondly, as per the mandates of the BD Act, 2002, it was imperative to ensure that the bioresource collection did not pose a threat to biodiversity conservation in the area while also providing fair and equitable benefits to the local communities involved in the collection. Additionally, the MFP collection created a potential for adverse human-elephant interactions due to the feeding preference of wild elephants towards bamboo shoots. Thus, the convergence of various challenges such as securing the livelihood of local communities, sustainable extraction of bioresources and mitigation of human-elephant conflict required the planning and implementation of a solution that not only holistically addressed these challenges but also fulfilled the core mandates of the BD Act.



ACTIONS TAKEN

The solution to address the multiple challenges affecting different stakeholders could only be found through a collaborative approach. The primary action taken was the formation of BMC by the Twichin Gram Bari Panchayat, under the mandate of the BD Act. The very next year, in 2016, the BMC signed an ABS agreement for the sale of two key commercially viable varieties of bamboo- *Melocanna baccifera* (mulu bamboo) and *Thyrsostachys oliveri* (Kanak kaich bamboo). The successful implementation of ABS led to the augmentation of income source for the local communities over the years.

To balance the commercial use of bamboo, the BMC also implemented a local blanket ban over the collection and extraction of bamboo in the village for one year which would help in the sustainable use of the bioresource over its indiscriminate use and also served as a mitigation in response to the human-wildlife conflict in the village.

The collaboration and integrative approach of the Twichin Gram Bari BMC with the local JFMC and the Forest Department helped in raising awareness among stakeholders through workshops and sensitization programmes.

Institutional support was also provided from various sources. The Tripura SBB handed over a cheque amounting INR 10,600 to the BMC Chairperson in a felicitation ceremony as an acknowledgement of the efforts of the BMC. The BMC also received funds through the NBA under GEF-ABS projects amounting INR 25,000 and INR 30,000 in 2015 and 2016 respectively. Funds are also being continuously accumulated through the ABS agreements on bamboo and other bioresources. The traders, who had signed the agreement with the BMC donated office infrastructures to the BMC and even presented books to the children of the harvesters as an appreciation towards seamless handling of the procedures.



IMPACT AND OUTCOMES

- The agreement on ABS opened up new avenues for a streamlined marketplace for the local communities to fetch a source of income.
- In 2020, due to the ABS agreement on locally grown bamboos, the total monetary benefit derived out of the use of bioresource was INR 7.70 lakhs, of which Twichin Gram Bari BMC's share was worth INR 15,400.
- With the decision of local BMCs to ban for over-exploitation of bamboos in the village helped in natural rejuvenation of the bamboos in the forest and for its sustainable use in the future. This decision also helped in addressing human-elephant conflict within the village.
- Twichin Gram Bari BMC in collaboration with the local JFMC & State Forest Dept. also took on the initiative of collaborating with adjacent BMCs to strengthen capacity, share knowledge on the use of bio-resources, and promote conservation for sustainable use of their bioresources.
- Realising the need for conservation of bioresources, Twichin Gram Bari BMC also took on the initiative of planting bamboo within the village to minimize their dependence on natural forest for extraction of the bamboos.

- In 2019, Twichin Gram Bari BMC also signed an ABS agreement over the use of wild cardamom (*Mucuna sp.*), which generated a substantial collection of INR two lakhs with per kilogram sold at the rate of INR 2,000. The BMC has also planned for future ABS agreement over potential high value bioresource such as *Homalomena aromatic*, which is used as an aromatic medicinal herb and found in their village.



KEY LESSONS

The initiative undertaken by Twichin Gram Bari BMC for implementing ABS mechanism in their village has hugely benefited the local community as they are reliant on the use of the bioresources to earn a decent source of income and has also prompted the need for prioritizing sustainable use of the bioresources.

The ban on the extraction of the bioresources for a certain period time to allow for rejuvenation has also addressed the immediate need for mitigation of human-elephant conflict within the village. Realising the need to minimize their dependence on forests, they took on the initiative for planting bamboo shoots within the village.

The joint venture of the BMC, local JFMC and State Forest Department to fix a minimum selling price of the bioresource while working in collaboration with adjacent BMCs has also strengthened capacity and knowledge sharing on exploring other potential high value bioresource for ABS agreements and ways to conserve bioresources has proved to be a monumental step towards achieving one of the core mandates of the BD Act, 2002. Such ABS mechanisms have a good potential for replication in ecologically and culturally similar regions in North East India, where natural and anthropological landscapes converge that cause similar challenges.

BEST BIODIVERSITY MANAGEMENT COMMITTEE



As per the BD Act, 2002, the local bodies are to constitute the Biodiversity Management Committees (BMCs), within their area of jurisdiction for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals, micro-organisms and chronicling of knowledge relating to biological diversity. Each BMC consists of a Chairperson, and six persons nominated by local bodies, including one-third women and 18 per cent Scheduled Castes/Scheduled Tribes representatives.

The major role of BMCs is to prepare, maintain and validate People's Biodiversity Register (PBR) in consultation with the local people. The PBR includes detailed information about the biological resources and traditional knowledge available within the jurisdiction of BMC. The BMCs also help in developing linkages with schools, colleges, universities, concerned research institutes and the SBB, so that their capability in local governance of resources is enhanced.

The Award aims to recognise the exemplary work of BMCs in documentation of biological resources and associated traditional knowledge; generating awareness; establishing best practices in biodiversity conservation, sustainable use, social and gender equity and empowerment and equitable sharing of benefits.

- The case of Shergoan BMC from Arunachal Pradesh is a story of synergy between the community and the government leading to rehabilitation of endangered species.
- The Purba Badlabari BMC from Tripura has been conserving the rich traditional resources including medicinal plants of the village Khowai.
- The case of Chicholi BMC located in the Naxalite-hit district of Gadchiroli in Maharashtra is a story of hope and determination wherein conservation have been carried out successfully with the active involvement of the community.



CONSERVATION THROUGH THE AGES

SHERGAON BMC,
ARUNACHAL PRADESH

Best BMC
WINNER

AN OVERVIEW

Abode to picturesque valleys and breath-taking wildlife, the village of Shergaon in the West Kameng district of Arunachal Pradesh harbours a tight-knit community of Sherdukpen people and their deep-rooted customs connected to nature. This agrarian community is located close to the Eagle Nest Wildlife Sanctuary, thus providing a habitat to various mammals including red panda, flying squirrels, martens, and the Himalayan black bear.

While being traditionally involved in hunting, the village-folk have been keen on conserving their natural heritage. Their aspirations saw the first light through the initiatives undertaken by Garung Thuk- a local non-government organisation. To expand the scale and impact of conservation work, a BMC was constituted in 2016 with the support of the village council, the community and Garung Thuk- which acts as its technical advisor under the counsel of the Arunachal Pradesh State Biodiversity Board (APSBB).

Since then, the Shergaon BMC has overseen the rehabilitation of endangered species by employing a complete ban on hunting of wild animals by locals. Today, as a result of the BMC's interactive community engagement efforts, poaching is considered a sin in Shergaon.

Apart from running conservation initiatives, the BMC also prepared its PBR in 2019 with the help of the North-Eastern Regional Institute of Science and Technology (NERIST). It identified a large variety of plants including endangered medicinal plants and mammals found in the region.

MEET THE CHAMPION

Aimed at protecting biodiversity and ensuring sustainability in natural resource utilization, the BMC maintains checks and balances along with exploring alternatives to mitigate anthropogenic pressures on nature. The committee also played a pivotal role in bringing in much-needed financial and technical support for the community's time-hallowed conservation practices, through governmental channels. Extensive awareness programmes are frequently organised to thwart hunting by locals, a major threat to the local wildlife, especially mammals like deer, wild boar and mountain goats, and to preserve customary beliefs and practices revolving around honoring and conserving nature.

Gender mainstreaming is also a crucial part of the committee's principles. The involvement of women in leading the activities like handicrafts – weaving traditional mekhla, jholas, etc., points towards the holistic approach it fosters and encourages to keep the traditions alive.

SOURCES OF FUNDING

The Arunachal Pradesh Biodiversity Board (APSBB), which supports the BMC in several activities including opening accounts of people as well as preparation of the Peoples Biodiversity Register is also its major source of funding. The BMC received a sum of Rs. 50,000 as a seed fund and INR 90,000 for preparation of its People's Biodiversity Register from the APSBB. The BMC works closely with the village council whose members are part of the committee and meetings are held as per requirement to discuss their activities and plans. The committee is immensely motivated and ambitious towards sustainability and highly receptive to inputs from experts and researchers to achieve their goals.



FORCES COMING TOGETHER

Following the constitution of the BMC, traditional practices have not only been legitimized and institutionalized but a whole range of collaborations from various agencies has vastly intensified the footprints of conservation. For instance, Garung Thuk has supported the BMC in its initiatives while the Shergaon Forest Division also collaborates in activities like planting, providing fresh saplings and monitoring. Support from Wildlife Institute of India and WWF in the form of workshops has accelerated the spread of environmental awareness amongst students. Assistance from various governmental departments such as fisheries and horticulture has been integral to the committee's modus operandi. Owing to its strong sense of fraternity, the committee has also set up an extension facility to train other BMCs for documenting their PBRs and share their own experiences and learnings. It plans to set up a forest voucher scheme and has provided 70 hectares of degraded land for afforestation wherein local women will look after the nurseries and the youth will be involved as researchers.



SUSTAINABLE INITIATIVES

Species Conservation - The Biodiversity Management Committee has reintroduced an endangered tree, *Gymnocladus assamicus* commonly called as the Himalayan Soap Pod tree into the village and preserved an ancient site of mud houses along with 6 species of Rhododendrons. This site is soon going to be notified as a Biodiversity Heritage Site. The BMC helped identify two in-situ Rhododendron gardens with the help of the village council and declared them as community gardens with support of the Shergaon Forest Division. The use of pesticides in the village has been minimized, thus providing support for an intact food chain. Pine wood has been substituted for valuable timber species in the making of tomato stakes.

Ban on Hunting - The community is sensitive to the loss of wildlife. The BMC has been implementing conservation awareness programmes to sensitise the community towards the harmful consequences of hunting. Hunting enjoyed a wide acceptance



in the society as a sport tracing its roots to the traditional practices of the region. However, with the efforts of the BMC, poaching is now considered a sin and they have integrated anti-poaching into their traditional folk dances through workshops. All these efforts have resulted in a reversal of an age-old tradition, where hunting by the local tribal folk has now been completely banned.

Protection of Indigenous Fish - The BMC has been involved in the protection of indigenous fish species, they have adopted a stretch of the Chhoskhorongkho river for five years from the village council and introduced trout species (Rainbow trout and Brown trout) procured from the Fisheries department, to reduce pressure on natives. The local fish is protected and a traditional three-day hunting festival has been limited to a single day.



CARRYING ON THE LEGACY

The community practices centuries-old customs rooted in respect and love for nature and biodiversity. The village has a sacred grove with 200-year-old oak trees. In order to protect these sacred groves and reduce instances of felling, the authorities now levy a substantial penalty of Rs. 50,000 on logging. The traditional cultural beliefs are also used to restrict locals from flouting the order for an instance., it is locally believed that disturbing the sacred groves leads to similar negative consequences on one's own family and it is even considered bad luck to use dead trees from the grove. In 2021, the BMC planted 200 saplings of oak *Quercus* in Zengbu lok sacred grove in collaboration with State Horticulture Farm and Range Forest Office, Shergaon.

These integrated sets of activities of BMC have provided a holistic approach towards biodiversity conservation by integrating their efforts with cultural practices of the region. With its efficient implementation and success rate, the Shergaon BMC acts as a model for other Biodiversity Management Committees to emulate. The local participation encouraged by the BMC has led to several conservation gains such as efficiently managing a sacred site with ancient trees, banning logging and minimizing the use of pesticides and an effective ban on firewood collection except for the community lands for domestic use.

THE ROAD AHEAD

Although the biodiversity board supports the BMC in its activities, a regular flow of funding is still lacking., Remuneration to the experts and organisations engaged in the conservation initiatives often falls short because of the gaps in funding. While the BMC members are very interested in working on the provision of Access & Benefit Sharing (ABS) and providing benefits to the community, so far, no ABS agreements have been signed. Researchers will be given access to the resources available with the BMC, including factsheets, documents, other knowledge and communication products, etc. to facilitate them with their study and generate wealth out of the rich natural and cultural heritage.

The BMCs future plans include establishing a 5-hectare demonstration area for medicinal plants and also establishing a medicinal garden. The area has been donated by the community and financial support from CAMPA is also expected.

Shergaon BMC plans to extend its technical support to the neighbouring BMCs in terms of knowledge-sharing, knowledge products, methodology and monitoring and assessment.

Regular field trips for the students and their part-time employment during the holidays on wages/day basis have been planned to expose them to conservation practices.

The BMC plans to increase female employment in the nurseries and medicinal gardens to provide equal opportunities and generate mass awareness regarding the conservation and protection of species. This is an excellent example of a progressive Biodiversity Management Committee, with a clearly defined pathway for its future and will to follow through.





Photo by Sourav Debriath on Unsplash

CONVERGING DEVELOPMENT AND CONSERVATION

PURBA BADLABARI BMC, TRIPURA

Best BMC
SPECIAL MENTION

AN OVERVIEW

Situated on the banks of the river Khowai in Tripura, from which it also takes its name, is the culturally rich district of Khowai. The district is bordered by Atharamura and Baramura ranges and flanked by Bangladesh to its north. In the Tulashikhar block of the district, is the Biodiversity Management Committee (BMC) of Purba Badlabari. Constituted on June 16 in 2017, the BMC has set an extraordinary example of how development and sustainability can go hand in hand.

About 687 families with diverse ethnic communities including Reang, Debbarma, and Tripuri inhabit the village. Most of the local community is dependent on forest resources for food and livelihood. The area has rich traditional resources including medicinal plants that have been used for healing and treatment. The villagers considerably depend on forests and therefore constitute an indispensable part of their lives.

Taking this into account the BMC encourages locals to prevent overexploitation of these natural resources and use it in a sustainable manner. The BMC's initiative along with community support has resulted in a plethora of positive changes including, restricted livestock grazing, conservation of indigenous rice varieties, bamboo plantation drives, protection of growing bamboo shoots, reduction in incidents of hunting and poaching, involvement of women in collection and selling of non-timber forest produce, and involvement of youth in the sustainable collection of biological resources in consultation with village elders.

IDENTIFYING THE OBSTACLES

The BMC faced multiple challenges ranging from frequent forest fires to the prevalence of unsustainable practices like jhum cultivation and overgrazing leading to rapid decline and degradation of the area's rich biodiversity. The communities previously used NTFPs in an unsustainable manner, thus putting immense pressure on these resources. Along with this, the cases of hunting and poaching in the area were also going unchecked, resulting in increasing human-wildlife conflict. The absence of community involvement was proving to be detrimental to the conservation efforts.

More than 85 per cent of the local community is dependent on forest resources for their food and livelihood and around 40 families generate an income of INR 5000-6000 per month from the bamboo collection. The tribal communities are highly dependent on available medicinal plants for treating various ailments. In view of this, it was imperative to come up with sustainable solutions to address these issues. Undoubtedly, the target was big and challenging but the BMC took pioneering steps in this direction to help overcome the challenge.



HURDLES HANDLED

The BMC has been sensitizing the communities about the threat to these resources and were encouraged to control overexploitation to ensure sustainable use and conservation for future generations. Furthermore, integrated steps were taken to tackle some key issues.

In order to address the issue of forest fires, the BMC, in collaboration with the Forest Department, organised workshops for generating awareness on the ways and methods to manage fires and mitigate the damages in the pre-fire season. BMC members meet twice a month, regularly organise family visits, and are in regular contact with the Forest Department as an outreach to encourage community involvement. An initiative was taken to check overgrazing and Jhum cultivation by restricting these activities in bamboo growing areas.

Small scale bamboo plantation drives were undertaken, and artificial protection of bamboo shoots was done during growth periods. The local communities are aware of the declining bamboo resources due to increased pressure on them; hence they have taken measures to artificially protect the growing bamboo shoots by controlled extraction of the shoots, thus, combining conservation with livelihood generation opportunities. Livelihoods were secured while also addressing human-wildlife conflicts by avoiding bamboo extraction from migratory paths for elephants and their feeding areas.

Holistic community involvement has been ensured by involving women, youth, and elderly people at the same time. While women and youth have been involved in the sustainable collection of NTFPs, fruits, bamboo shoots, etc. for their consumption and for selling in the local markets, the village elders are consulted for judicious collection of these resources.



SIGNS OF VICTORY

The path followed to tackle the challenges in a sustainable manner brought laurels to this BMC.

The incidents of hunting and poaching of civet cats and leopards reduced after the establishment of the BMC as a result of their extensive awareness programmes. Along with sustainable management of the biological resources, the BMC successfully increased community involvement in conservation activities.

Another initiative on conserving rice varieties as a genetic resource has led to the documentation of over 18 rice varieties in the People's Biodiversity Register.

Channelling the ABS earnings back into the community has secured livelihoods and strengthened conservation. The funds received through ABS have been used for the plantation of bio-resources. The work of planting some trees like bamboo, Sugandhmantri (an essential oil derived from it has a very good demand in the perfumery and cosmetic industry - traditionally used to deal with kidney meridians, joint discomfort, lower back, and knee pain or weakness) and other vegetation is in progress.

KEY LESSONS LEARNED

- Through their extensive awareness programmes, the BMC has successfully encouraged local communities to use natural resources in a sustainable manner by closely monitoring any overexploitation and also helped address the human-wildlife conflicts while also ensuring sustainable livelihoods.
- The BMC has successfully ensured inclusivity by the involvement of locals from all age groups. This community engagement has been an important factor in the acceptability of their interventions.
- The judicious utilization of ABS funds has ensured not only the conservation of bio-resources but has also led to the enhancement of livelihood opportunities.





HOPE SPRINGS IN INDIA'S RED ZONE

CHICHOLI BMC, GADCHIROLI, MAHARASHTRA

Best BMC
SPECIAL MENTION

AN OVERVIEW

Nestled in the bio-rich area in Dhanora taluka of Gadchiroli district, Chicholi BMC represents the three villages under the Chicholi Gram Panchayat - Chicholi, Waghbhumi, and Jevalvahi. This Naxalite-hit region of Maharashtra is also the permanent abode of the Gonds, Madia, Pradhan, and Kolam tribes. Their traditional knowledge on the biodiversity of cultivars and medicinal plants is extremely rich and has been embedded in their spiritual values since many generations. Focus has been on the use of indigenous plant and animal species. What makes this BMC stand out even more is its composition - all-women! Initiatives to document and conserve biological resources, regulate the trade of bio-resources, and tackle unsustainable harvest practices have been carried out successfully with the active involvement of the community and Cranes NGO team. This makes the BMC an excellent example of complementarity between SDG 5 (women empowerment) and SDG 15 (Life on Land).



HURDLES OVERCOME

Chicholi BMC struggled to function owing to its remote location and influence of Naxalite activities. The BMC faced difficulties in explaining to the villagers the importance of their work. Poaching and illegal trade of bioresources had been a nuisance. Unsustainable harvest practices of 'Moha' (*Madhuca longifolia*) had made their livelihood situation precarious.

The predominance of hybrid varieties of crops threatened the survival and persistence of the local traditional cultivars. The villagers have pointed out that "Some of their old varieties are extinct". Growing high-yielding varieties of crops also led to reliance on chemical pesticides and fertilizers.



INITIATIVES UNDERTAKEN

To address the issue of lack of awareness and necessity of their initiatives, the BMC took advantage of the community celebrations, especially festive occasions, as opportunities by the villagers to conduct surveys for identification of bio-resources in groups. A system of patrolling to guard the forest as well as forest fines were introduced to tackle poachers and illegal trade.

Rules and regulations were constituted to address unsustainable harvest practices and regulate the trade of bio-resources. Seed funding has been provided by the Maharashtra SBB to initiate PBR activities. A communication channel was developed among BMC, Village Development Committees, and Maharashtra SBB for transparency in trade negotiations for the stakeholders involved.

IMPACTS AND OUTCOMES

The PBR of Chicholi BMC has identified 534 floral species and 127 faunal species so far, including 58 species of useful plants. The fact that the region still suffers from Naxalite-activities does not deter the villagers, who on their part, have shown their full support to the BMC and NGO Cranes. The village citizens, especially the womenfolk, are more concerned about the sustainable utilization of bio-resources. Festive occasions are used as opportunities by the villagers to conduct surveys for identification of bio-resources in groups. Approximately, 70 surveys were conducted to aid in this endeavour.

NGO Cranes trains the BMC members. The training programs conducted have ensured that the trade going on is sustainable and that the carrying capacity of the proposed traded species is not breached. Before any trade is initiated by the Village Development Committee, prior consent is sought. This way, transparency in all trade negotiations for the stakeholders involved was attained. Also, Chicholi enjoys the distinction of being the pioneering village in Maharashtra to receive a levy fee for the sale of bio-resources. Early Access and Benefit Sharing attempts have been recently attempted for an important medicinal species known as 'Podora'.

Awareness programs by BMC and NGO Cranes on the importance of use of indigenous species of flora and fauna, the BD Act, ABS mechanism, and importance of PBRs have ensured a well-aware

citizenry. The tribal village uses only the local traditional cultivars. Locals have shunned chemical pesticides and fertilizers for self-prepared organic compost for better yields.

No illegal activities like tree-felling or poaching are permissible in the jurisdiction of BMC. The prohibition of using bark or roots of plants for trade is a conservation measure to prevent the loss of certain plants from the ecosystem. To curb the threats to biodiversity and promote sustainable and legal trade of bio-resources, a fine of INR 500 is levied on those engaging in illegal activities. The villagers themselves carry out patrolling to prevent such infringements.

Conservation of Indigenous Plant species:

- BMC has planted 200 saplings (indigenous species) of "Tamarindus indica" and has plans to plant other tradeable species sustainably, in view of their market demand.
- No trade is carried out more than 50 per cent of its total availability.
- Locals use only indigenous species of crop varieties of rice, wheat, maize, cereals, pulses, vegetables and fruits.
- Each household has a patch of vegetables often related to wild cultivars.

- No trade of barks and roots of species is permitted.
- BMC is planning to develop a seed bank for preserving the local and endangered plant species for future.

Conservation of Indigenous Domestic Animal Species:

- Locals use only the indigenous domestic animal species of cow, buffalo, bull, goat, hens, ducks, and fishes.



REPLICABLE LEARNINGS

- Multiple surveys involving local people have led to a much stronger vision of the use of the surrounding bio resources. Festive occasions were used as opportunities by the villagers to conduct surveys for identification of bio-resources in groups and thus aid in the realization of National Biodiversity Target on Participatory Governance as well as the Target 20 of the upcoming Post-2020 GBF.
- The culture of Chicholi is strongly embedded in nature based traditional knowledge, which is flourishing till date through local festivals. As they have all been traditional hunter gatherers, they know sites for collection and uses of different resources including many medicinal plants, traditional crop varieties, as well as wild flora and fauna. This has positively transformed into the objectives of the present-day BMC. The people have appreciated the importance of continuing planting their own.
- It has negotiated an ABS for an uncommon plant species. A remarkable feature is the great enthusiasm displayed by the ladies in the group. They have developed their own terms and conditions for trading so that it is within the carrying capacity of their forest and hence also aiding in the realization of sustainable habitat management efforts (NBT 5 and Target 4 of Post-2020 GBF). The prohibition of using bark or roots of plants for trade is a conservation measure to prevent the loss of certain plants from the ecosystem.
- Chicholi began its journey of leveraging biodiversity valuation for socio-economic uplift (NBT 2) of its residents when it earned the distinction of being the first village to get a levy fee for sale of bio resources in Maharashtra. As a group, they have learned how to trade medicinal plants and how to maintain a bank account, which again goes on to show the importance of biodiversity conservation and valuation exercises in the socio-economic upliftment of communities (Target 8 of Post-2020 GBF).



PROFILES OF THE JURY MEMBERS: INDIA BIODIVERSITY AWARDS 2020-21



Dr. Erach Bharucha (Chair)

Dr. Erach Bharucha, a professional surgeon, has been actively working in wildlife and nature conservation for the past 45 years and has several publications to his credit. Former Chairman of Maharashtra State Biodiversity Board and member of Central Zoo Authority, he has been the Director of Bharati Vidyapeeth Institute of Environment Education and Research since its inception in 1994. The Institute runs Masters programmes in Environment Science and Technology, Geoinformatics and Wildlife Conservation Action. A well-known wildlife photographer, he worked as a consultant to the Government and several Non-Government Organisations on conservation issues, also reporting various programmes and projects. He has been a member and executive functionary on several conservation institutions such as the Bombay Natural History Society, Worldwide Fund for Nature, Pune, Wildlife Institute of India, Wildlife Trust of India and the Salim Ali Centre for Ornithology and Natural History, and attended committees for the Planning Commission Government of India.



Dr. A.K Gupta (Co-chair)

Dr. Atul Kumar Gupta, IFS (Retd.), is PhD from the University of Cambridge on Commonwealth Fellowship. Dr. Gupta served as Principal Chief Conservator of Forests and Head of Forest Force, Forest Department, Government of Tripura before superannuating on 30th June 2018 on completion of about 36 years of active service. Dr. Gupta also worked as Senior Professional Fellow at the Wildlife Institute of India, Dehradun for a period of one-year post-retirement from February 2019 to January 2020. He has extensively worked with the Government of Tripura in various capacities including Chairman, Appellate Authority of State, State Forest Department, State Level Committee on Formulation of Action Plans on SDGs among others.

Dr. Gupta brings in interdisciplinary working experience and expertise gained as an administrator, academician and researcher in bracing up existing landscape level strategies for conservation and management of forestry and wildlife resources. He has undertaken consultancies with USFWS, WWF, UNDP, GEF, on biodiversity conservation and sustainable economic development.



Dr. Dipal Roy Chaudhary

Mr Dipal Roy Choudhury, presently working as Joint Registrar, Protection of Plant Varieties and Farmers' Rights Authority(www.plantauthority.gov.in), a Statutory organisation, under Ministry of Agriculture and Farmers Welfare, Govt of India, that works for establishment of an effective system of plant variety protection, Farmers' and Breeders' Rights in India etc. His team also manages the National Gene Bank of PPV&FRA that conserves orthodox seeds of varieties registered under PPV&FR Act, 2001 and responsible for DUS testing and registration of Rice, Cotton, Maize crop species. He had also worked with the committee and edited the two-volume publication(s) entitled "Agro-Biodiversity Hotspots in India: Conservation and Benefit Sharing" by PPV&FRA and currently a member of the Expert Committee on Access and Benefit Sharing of National Biodiversity Authority. Sh Dipal Roy Choudhury has also twenty years of experience in the field agril. project management, monitoring and evaluation, industrial R&D, while working at TIFAC-DST; Thapar University, TERI etc.



Dr. Neelima Jerath

Founder Member Secretary of Punjab Biodiversity Board, Dr Neelima Jerath is presently working as Director General, Pushpa Gujral Science City, one of the three major Science cities of India, and as Advisor-Environment (part time) to Department of Water Supply & Sanitation, Govt. of Punjab for World Bank projects. She has earlier served as Executive Director, Punjab State Council for S&T and Founder Member Secretary, Punjab Innovation Council where she is credited with setting up of Patent Information Centre, Climate Change Knowledge Center, Regional Center of Expertise for Sustainable Development Education, ENVIS Centre and Intellectual Property Facilitation Centre for MSMEs. She was also Chairperson, State Expert Appraisal Committee for granting Environmental Clearance to industrial, construction and mining projects. A Ph.D. with Certificate Courses from Int. Centre for Conservation Education, U.K., Smithsonian Institution, USA and Univ. of Uppsala, Sweden and Diploma in Management, IGNOU, she has consulted for UNDP and undertaken multi country projects for UNESCO and is Member of various Expert Committees of DST-Gol., NBA, MoEFCC, etc. Recipient of Punjab Government Award for contribution in environmental work, double Gold Medals, State Farms Corporation Award, etc., the Science City received National Award for Science Communication under her leadership. She has 34 books & policy documents to her credit.



Dr. Ruchi Pant

Dr. Ruchi Pant is a development professional currently working as Programme Manager, Climate Change, Resilience, Biodiversity and Chemical Management, UNDP. She has more than 30 years of rich experience in the field of natural resource management and biodiversity conservation, particularly in the domain of customary laws related to regional cooperation in conservation, environment and trade, traditional knowledge, water management and decentralized governance. Prior to joining UNDP, she was Director, Eastern Himalaya Programme, Ashoka Trust for Research in Environment and Ecology and has also worked with conservation organisations such as WWF – Nepal, Public Interest Legal Support and Research Centre, International Institute for Environment and Development, and the Centre for Study of Developing Societies. She has served on several Central and State Government committees related to conservation. Dr. Pant has represented India at several international conferences and high-level events at the international fora. She was a Visiting Law Fellow to the Boalt Law School, University of California, Berkley in 1994. She obtained her doctoral degree in 2008 from the Centre for the Study of Law and Governance, Jawaharlal Nehru University, New Delhi; her doctoral thesis focuses on Legal and Non-Legal Mechanism for Protection of Traditional Knowledge Systems related to bio-genetic resources.



Dr. Pradeep Vyas

Dr. Pradeep Vyas joined Indian Forest Service in the year 1983. He completed a Ph.D. in Wildlife Science and Advanced Wildlife Management Course from Wildlife Institute of India, Dehradun.

He superannuated at the position of Principal Chief Conservator of Forests & Chief Wildlife Warden, West Bengal in April, 2017 after completing distinguished 34 years of service in Indian Forest Service. He also worked as Field Director of the Sundarban Tiger Reserve and Buxa Tiger Reserves. He brought a paradigm shift in Sundarban management for an innovative, technology driven and participatory form of management. He is a member of IUCN Species Survival Commission, Rhino Specialist Group. He has co-authored three books on Sundarban and published a large number of scientific papers.

He has been awarded “Sanctuary ABN-AMRO - Wildlife Service Award 2006” for exemplary protection efforts in Sundarban and has also received “Golden Tiger, Best Green Administrator Award” in 2016 and “Life Time Achievement Award in Wildlife Conservation” from KIWFF, Kolkata.



Dr. Vishaish Uppal

Vishaish Uppal has over 30 years of experience in working on environmental governance, forest & protected areas, community led natural resource governance & management, local institution building, local livelihoods development, human rights, gender and social inclusion as well as sustainable development. She has been working on issues like IP&LC rights, traditional knowledge and systems, forest rights, food security, social equity and civil society engagement. She also has been engaged in policy work at the national and international level which are related to forests, biodiversity and sustainable development. Has represented WWF at intergovernmental processes including the Convention on Biological Diversity, UNCCD and open working group session on SDGs. She has also worked in Indian Institute of Public Administration, Udyogini and Centre for Equity Studies. She has been a member of various Government committees and also the Forest Governance Learning Group, National Campaign of Peoples Right to Information. She is currently is working with WWF India as Director, Governance, Law & Policy.



Dr. Rakesh Shah

An IFS Officer of 1984 batch, Dr. Rakesh Shah retired as the Principal Chief Conservator of Forests (PCCF), Uttarakhand. Prior to that, he also served as the Chairperson of the Uttarakhand Biodiversity Board.

Dr. Shah is a visiting faculty in several key institutions and universities including the Indira Gandhi National Forest Academy, Dehradun; Kumaon University, Nainital; International Center for Environmental Audit and Sustainable Development (iCED) Jaipur; and Graphic Era University, Uttarakhand. He has also published several books focusing on the rich biodiversity of Uttarakhand.

Dr. Shah is the recipient of a number of awards including the prestigious Indian Foresters Prize received in 1994 for designing and developing “Fuel Bricketing Machine”. The Government of Uttar Pradesh also awarded him with the Best Plantation Prize in 1999. He was recently conferred the Lifetime Achievement Award by The Principals Progressive School Association in 2019 for his contribution to biodiversity conservation.



Dr. Priya Davidar

Dr. Priya Davidar has a Ph.D. in Zoology from Bombay University under the guidance of Dr. Salim Ali, and a S.M. in public health from Harvard University. She was a post-doctoral fellow and later a senior fellow at the Smithsonian Institution, USA. She retired as Professor of Ecology from Pondicherry University. She is a fellow of the American Association for the Advancement of Science. Her research focus has been mainly on plant ecology, biogeography and conservation. She has also investigated the causes of forest degradation around protected areas in India. Her recent work has been on landscape ecology and genetics of Asian Elephant populations in the Western Ghats. She has trained 18 Ph. D. scholars and published over 150 scientific papers. She is actively involved in practical conservation and advocacy through networks of conservation organisations, and currently works in the Sigur plateau of the Nilgiri Biosphere Reserve.



Dr. Pravir Deshmukh

Dr. Pravir has a PhD in Botany and around 16 years of work experience in the field of biodiversity, environment management and climate action. His expertise includes the areas of Biological Diversity Act, environment regulations, and sustainable value chain management. At the Confederation of Indian Industry (CII), he leads the Climate Action and Nature portfolios and works with Indian Businesses on integrating climate and nature loss risk in decision making. He manages the India Business & Biodiversity Initiative (IBBI) with business members and has developed an India specific tool for business to manage biodiversity and reporting. Through the IBBI platform, he has been influencing leading business members, stakeholders and government to make stronger decisions in integrating biodiversity value across private and public sectors. As part of Climate Action portfolio, he is supporting businesses for collaborative action areas for policy development, sustainable finance and nature-based solutions.

ABOUT THE INDIA BIODIVERSITY AWARDS

The idea of the India Biodiversity Awards (IBA) was proposed in 2012, the year in which the Eleventh Meeting of the Conference of Parties (CoP-11) of the Convention on Biological Diversity (CBD) was held at Hyderabad, India. A strong need was felt to highlight the success stories of conservation from India at the CoP.

It was realized that in India, biodiversity conservation and its utilisation had several champion individuals and institutions, within the government as well as in community-based organisations (CBOs). While they had been supporting the conservation and sustainable development objectives of the Sustainable Development Goals, they were yet to be formally recognized or rewarded.

The IBA were initiated to incentivise individuals and institutions who worked tirelessly towards conservation and sustainability. It was also expected that this recognition would further inspire a range of other stakeholders, including individuals and institutions.

UNDP approached the Ministry with the idea of jointly giving the awards so as to recognize the efforts and initiatives of a range of actors in conservation. The idea was welcomed as an innovative way to gather good practices from across the country. The IBA became the highpoint of the 2012 CoP and were announced at an official dinner attended by the Heads of Government of 180 countries.

Since then, five rounds of the Awards have been successfully organised, recognising a variety of conservation champions and institutions.

Evolution of the Awards

The first three awards held during the years 2012, 2014 and 2016, were facilitated by the Ministry of Environment, Forest and Climate Change (MoEFCC) in association with UNDP. The Awards were institutionalised with the National Biodiversity Authority (NBA) in 2017, and aligned with the objectives of Biological Diversity Act, 2002. UNDP India continues to serve as the knowledge partner for the awards.

Hundreds of applications are received during each Award cycle, based on a set of relevant categories. These categories have evolved over the years to make the awards increasingly inclusive as well as relevant to the mandate of biodiversity conservation. In 2012, the IBA categories depicted the different biodiversity governance models in the country – Community Stewardship, Co-management, Decentralised Governance and Protected Area. In 2016, the Award categories were aligned with the mandate of Biodiversity Conservation and its three pillars, to strengthen the implementation of the provisions of the Biological Diversity (BD) Act, 2002. The resulting categories were-Conservation of Threatened Species, Sustainable Use of Biological Resources, Biodiversity Management

Committee and Successful Mechanisms of Access and Benefit Sharing.

In the subsequent round of Awards, further refinement of categories and formation of subcategories took place to ensure fairness to all users and protectors of biological resources. As a result, 2018 onwards, 'Institutions' and 'Individuals' were added as subcategories to the Conservation and Sustainable Use categories.

In the current round of Awards, applications were received under the following four categories:

1. Conservation of Wild and Domesticated Species
2. Sustainable Use of Biological Resources
3. Best Biodiversity Management Committee
4. Successful Mechanisms of Access and Benefit Sharing

A grading scale was created for each category and the final winners were selected through a field validation process.

The response has been dramatic and has unearthed several unique features of bioresource conservation at the grassroots level. Farmers, pastoralists and fisherfolk in the private sector as well as institutions that have spontaneously created initiatives adhering to the needs of the BD Act, 2002 at grassroots level in society. In addition, there have been remarkable individuals whose efforts have gone a long way to preserve

bioresources for the pleasure and satisfaction they get by doing so. Several have made a difference and have been recognized as local leaders who have spent their lives to protect and conserve India's wealth of biodiversity. Rewarding these front liners through the IBA has created a new movement in society that has begun to realize how important the conservation of biodiversity is for our nation's bioresources, genetic, species and ecosystem security.

Objective of the Awards

The purpose of the IBA is to reward excellence in biodiversity conservation and sustainable use initiatives. It has encouraged a variety of stakeholders to participate in the evaluation of their conservation activities.

While India has a powerful legal set of Acts, Rules, and Regulations to protect our bioresources both in-situ and ex-situ, the BD Act, 2002 creates norms for its sustainable and equitable utilization. The IBA encourages the stalwarts of biodiversity conservation by recognising what they have done for the nation's bioresources.

The main objective of the awards is to incentivise the effective implementation of the BD Act, 2002, which was enacted to meet the obligations under the CBD, i.e.

1. Conservation of biodiversity
2. Sustainable use of the components of biodiversity and
3. Sharing the benefits arising from the commercial and other utilisation of genetic resources in a fair and equitable way

Besides being an efficient mechanism to capture good practices, the awards process helps in two ways. Primarily, when the eminent jury specialising in different aspects of biodiversity conservation visits the field for the validation process, a large number of stakeholders learn about the law, legal provisions and experiences from other sites. Second, the jury learns from the field and brings back tremendous experience to share with the NBA and the State Biodiversity Boards (SBBs) which inform policy and practice, ensuring exchange of ideas and innovations.

The IBA is also a tool for conservation education and public awareness as they generate awareness and sensitise people and institutions to the concept of conservation, sustainable use and fair and equitable sharing of benefits from use of biological resources.





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