HORIZONS OF HOPE

Community Led Initiatives towards Sustainable Landscapes

in

MEGHALAYA

MEGHALAYA BASIN MANAGEMENT AGENCY

FOREWORD

The Meghalaya Basin Management Agency (MBMA) has been leading transformative initiatives in Meghalaya, focusing on sustainable livelihoods and integrated natural resource management. This publication highlights the remarkable journey of MBMA's flagship project, the Meghalaya Community-Led Landscape Management Project (CLLMP), funded by the World Bank.

CLLMP has provided vital support, knowledge and resources to communities, empowering them to address environmental challenges and build resilience. By emphasizing community engagement, capacity building and sustainable resource management, CLLMP has made a significant impact on rural livelihoods in Meghalaya.

This Coffee Table Book celebrates the achievements of CLLMP and the collaborative efforts of MBMA, the World Bank, and the communities involved. It showcases interventions and positive outcomes, emphasizing the importance of community-led initiatives for sustainable development.

I extend my deepest appreciation to the dedicated team at MBMA and all stakeholders who have contributed to CLLMP's success. Your commitment and support have transformed livelihoods and fostered sustainable development in Meghalaya. Let's celebrate the journey of CLLMP, inspired by the collective vision of MBMA and the World Bank, as we continue working towards a prosperous and sustainable future for the people of Meghalaya.

Conrad K. Sangma
Chief Minister of Meghalaya

MESSAGE
from Chief Secretary

I would like to congratulate the Community-led Landscape Management Project (CLLMP) for yet another feather in its cap. I have been fortunate enough to witness the inception and growth of CLLMP over the years and can wholeheartedly extend my support for their good work. They have been doing exceptional work in addressing critical issues in Natural Resource Management especially regarding climate change. Their unwavering dedication and tireless efforts to combat this global challenge are truly commendable.

The project's commitment to creating a sustainable future is instrumental in driving positive change. And their advocacy through the popular press and digital media has reaped rich dividends for the cause.

From conducting impactful research on the causes and effects of global warming to actively engaging with the government and communities, the project has demonstrated an unparalleled ability to foster collaboration and generate meaningful solutions. Their emphasis on education and outreach programs has also played a pivotal role in empowering individuals and communities to take action, amplifying the impact of the efforts manifold.

In conclusion, I would like to once again express my deepest gratitude to CLLMP and all the individuals involved in its remarkable work. Your efforts are making a substantial difference in our state and region. Keep it up!

D. P. Wahlang, IAS
Chief Secretary, Government of Meghalaya

MESSAGE
from Project Director

At the onset, I would like to congratulate the Meghalaya Basin Management Agency (MBMA) for the impact it has generated through its flagship project, the Meghalaya Community-Led Landscape Management Project (CLLMP), funded by the World Bank. Seeing the initiatives succinctly captured in this Coffee Table Book is gratifying.

Meghalaya's resilient and strong-knit communities have been driving the efforts towards sustainable approaches, and measures are ongoing to capacitate them to find local solutions to the environmental concerns plaguing the region. In view of this, Natural Resource Management Committees (NRMCs) have been set up across the State and are playing a crucial role in tackling challenges pertaining to climate change. So far, about 5716 NRMCs have been formed across the state.

Meanwhile, a strong environment cadre from among the community is being nurtured across the State involving the young people- known as the Village Community Facilitators (VCF). Over 13000 VCFs have been trained in Natural Resource Management and are being embedded in the NRMCs. The larger goal is to build the community's capacity to handle environmental issues through a landscape approach. Topics such as water shortage, forest fires, soil degradation, and acid mine drainage among others, are being addressed through innovative and sustainable measures that include spring shed management, contour trenches, afforestation, forest management, and construction of Open Limestone Channel (OLC) for restoration of acid mine drainage, among other innovative and sustainable solutions.

Forest Management Plans (FMPs) have been prepared both in the CLLMP and non-CLLMP villages as a more considerable measure towards addressing climate change and catchment area protection. Meghalaya is pioneering the Payment for Ecosystem Services (PES) model, renamed GREEN Meghalaya (Grassroot Level Response towards Ecosystem Enhancement and Nurturing) to incentivize those proactively protecting natural forests. Through the PES and above mentioned initiatives, Meghalaya is now placed in the carbon market, and this will not only generate revenue for the State but also bring forth new livelihood channels for the people.

Meghalaya's resilient and strong-knit communities are driving the efforts towards sustainable approaches and leading a silent revolution to recommit to the cause of the planet. And through the CLLMP, the communities are bringing a cohesive approach towards mobilizing all efforts to create a beautiful example of a harmonious symbiosis between Nature and human beings.

Sampath Kumar, IAS
Project Director, CLLMP

CONTENTS

Introduction

"Horizons of Hope: Community Led Initiatives towards Sustainable Landscapes in Meghalaya", was conceived to share with our readers, the world of the Meghalaya Basin Management Agency (MBMA) and how its Community-led Landscape Management Project (CLLMP) has brought changes at the grassroots of Meghalaya.

At the heart of the MBMA's initiatives is the CLLMP project dedicated to fostering community-led initiatives in integrated natural resource management. The project focuses on enhancing knowledge and capacity within communities, promoting sustainable natural resource management, and making strategic investments in natural resource activities.

The book provides images and details on the many initiatives that have been implemented from the CLLMP stables. These are stories of communities and individuals, forests and rivers and how each is intertwined into the fabric that is rural Meghalaya. These are chronicles of people coming together, collaborating, and implementing sustainable practices and resultingly, changing landscapes and lives for the better.

CLLMP is also the story of a team, spread across the districts of the state and churning tirelessly in the headquarters in Shillong – its members making their way through the most challenging terrains, collecting perspectives and pushing innovations. This book is an attempt to present the hard work that goes into successful programs in the form of visuals and data. We will delve into the landscapes of Meghalaya, where its residents have harnessed their collective wisdom and traditional knowledge to preserve the rich biodiversity and fragile ecosystems that define the region. Through vivid imagery and captivating narratives, we will see how innovation and tradition can go hand in hand.

May this coffee table book serve as a tribute to the resilient people of Meghalaya, their captivating and unique landscapes, and their priceless cultural heritage.

CULTIVATING SELF-SUFFICIENCY

CLLMP's Thriving Community Nursery Movement

Meghalaya's journey towards self-sufficiency and environmental conservation has taken root through an inspiring endeavour—the establishment of nursery units in every project village. These green sanctuaries have significantly reduced the state's dependence on neighbouring regions for sapling imports, promoting a sense of self-reliance and sustainability. A total of 339 nursery units are nurturing an inventory of 373,434 saplings. Among these, 144,895 saplings are made available for sale, creating a steady supply of plants to meet diverse needs.

To ensure sustainability, CLLMP has set up an additional 212 new permanent nursery units. These units are owned by individuals and communities, empowering local stakeholders and promoting collective action. Impressively, the nursery units exhibit a commendable survival rate of approximately 83%, reflecting the dedicated care and expertise invested in their nurturing. When these saplings are planted, they boast a significant survival rate of about 75%. To ensure the equitable distribution of benefits, a comprehensive repository has been developed, consolidating information on project-established nurseries. This repository serves as a valuable resource, encompassing nurseries supported by the Soil and Water Conservation Department, the Forests and Environment Department, and community-driven initiatives.

NURTURING GREEN

The Afforestation Endeavour

In an effort to combat deforestation, 702 afforestation units have been established across 11 districts, resulting in the planting of 810,438 saplings over 8,828 hectares, including catchment areas. The survival rate stands at an impressive 69%, with 562,027 species flourishing. To address challenges such as fires, cattle, trespassing, and illegal tree felling, the Village NRM Committees conduct periodic awareness campaigns and monitoring activities.

CLLMP places a priority on sowing endemic species, wherein 60% of the plants chosen are those that retain water, and 40% are either fruit-bearing or commercial plants. Nursery units in all project villages meet the sapling requirements. This endeavour aims to restore biodiversity, enhance ecosystem services, and mitigate deforestation impacts. The 69% survival rate demonstrates the project's commitment to long-term sustainability.

Beyond the numbers, afforestation brings numerous benefits to communities and the environment. Planting endemic species contributes to the conservation of native flora and the development of resilient ecosystems. Water-retention plants aid in conservation and sustainable water management. Fruit-bearing/commercial plants offer economic opportunities. Through community participation, awareness campaigns, and conservation commitment, the afforestation initiative of CLLMP is a model for environmental stewardship.

Preserving MEGHALAYA'S Natural Resources:

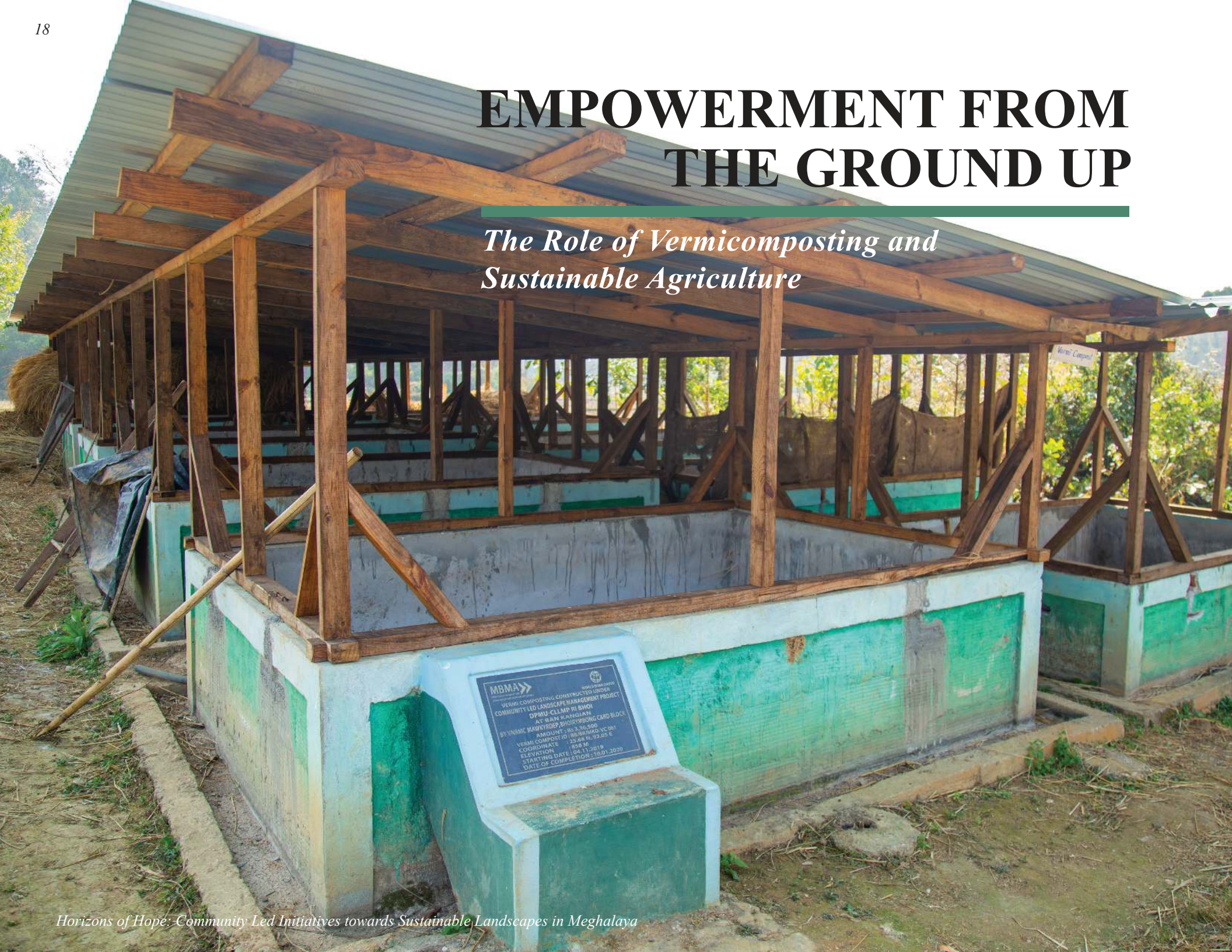
CLLMP's Commitment to Soil and Water Conservation

The Community-Led Landscape Management Project (CLLMP) in Meghalaya has championed soil and water conservation through its empowering initiatives. Water harvesting structures, including conservation ponds, play a vital role in preserving water for future needs, recharging groundwater, and supporting agricultural and domestic purposes. Driven by community participation, CLLMP has witnessed an impressive 74,446 activities related to soil and water conservation. Measures such as terracing, trenches, recharge pits, and Gabion walls have significantly reduced soil erosion and siltation, preserving soil fertility. The enhanced soil moisture has led to improved crop growth, increased productivity, and higher incomes for farmers.

These soil and water conservation efforts have a holistic impact, benefiting not only individual farms but also downstream ecosystems. By preventing erosion and retaining topsoil, CLLMP safeguards water quality in rivers and streams, contributing to the overall health of the landscape. CLLMP's commitment to sustainable practices, community empowerment, and resource preservation is transforming rural landscapes in Meghalaya. Through collaboration among communities, partner organizations, and government agencies, these activities nurture the land and livelihoods, paving the way for a sustainable future.

EMPOWERMENT FROM THE GROUND UP

The Role of Vermicomposting and Sustainable Agriculture



As part of a pursuit of enhancing agricultural productivity and improving the livelihoods of rural communities, CLLMP has undertaken an initiative to promote composting techniques. Across 11 districts, a total of 240 composting units have been established. These units encompass a range of composting methods, including vermicomposting, 18-day composting and NADEP. As a result, a significant quantity of compost has been produced, with 8,768 kilograms made available for sale. Priced at a range of Rs. 30 to 50 per kilogram, this compost offers a valuable resource for agricultural needs. To ensure the accessibility of composting materials, the project's District Project Management Units are supporting the Village NRM Committees (VNRMC). This collaboration aims to facilitate the procurement of composting materials from project villages, whether they are located within or outside the respective districts.

The project recognizes the importance of supporting local initiatives and strengthening community ties. This not only provides a significant boost to the incomes of the VNRMCs but also highlights the potential economic benefits that arise from sustainable agricultural practices. These endeavours underline CLLMP's commitment to empowering rural communities and promoting sustainable agricultural techniques.

TREATMENT OF MINING AFFECTED AREAS

Physical and Biological Treatment

In Meghalaya, thousands of households are dependent on coal mining activities for their livelihoods. However, unscientific mining, particularly the archaic rat-hole mining method, has resulted in widespread degradation of agricultural lands, forests, and water resources. Previously verdant landscapes have turned barren and arid due to this mining technique, which leaves behind coal mine spoils that have a harmful impact on the environment and ecosystem. Soil acidification, contamination by toxic metals, and disruption of nutrient cycles have made the land susceptible to further degradation.

Acknowledging the urgency to address these environmental challenges, the state has embarked on a journey of land restoration and ecological balance. The restoration efforts encompass several crucial aspects. Lime is being utilized to reclaim acidic soil, neutralizing its acidity and restoring its fertility for sustainable crop production. Organic approaches, such as mulching, crop rotation, and mixed cropping, are being implemented to conserve the land, prevent erosion, and enhance soil fertility. Additionally, long-term plantation of native tree species is underway to stabilize the land and promote biodiversity. To date, a total of 303.4 hectares of mine-spoiled lands have been treated, benefiting over 5262 households.

RESTORING WATER

The Open Limestone Channel Initiative

In Meghalaya, unscientific coal mining has devastated water resources, resulting in highly acidic springs and streams with pH levels of 3-5. To reclaim safe water, a cost-effective solution called Open Limestone Channels (OLCs) has emerged. These channels contain layers of limestone aggregate, which passively neutralize acidic water by facilitating reactions between carbonate and hydrogen ions. The construction of OLCs requires careful consideration of terrain characteristics. Steep slopes can lead to inadequate neutralization, while low slopes may cause heavy metal precipitation. The optimal channel gradient is crucial for efficient performance.

With CLLMP's assistance in fostering community mobilization and participation, we have successfully managed to construct OLCs. The first channel was completed on 18 May 2021 at Thanglooh spring in Mooliat Bri Sutnga VNRMC, East Jaintia Hills District. The result was a discharge rate of 1.65 liters per minute during the lean season, benefiting over 60 households.

The initiative has addressed a decade-long water scarcity issue, which forced households to spend significant amounts on purchasing water from other villages. The OLCs have increased the pH value to safe levels as the water flows through the limestone layers, making it suitable for domestic use. The OLC initiative under CLLMP is being expanded across Meghalaya, with 8 channels completed and 7 currently underway.

MEGHALAYA'S SPRINGS

Charting a Path towards Conservation through Mapping and Monitoring

Meghalaya boasts a vast expanse of over 60,000 springs, with nearly 80% of its 6,800 villages relying on them for crucial water needs like household consumption, drinking, and irrigation. However, in recent years, approximately 55% of these springs have experienced either drying up or a significant decline in water discharge. Recognizing the vital role of springs as lifelines for these villages, CLLMP has proactively undertaken the task of mapping, monitoring and management of these essential water sources.

To date, more than 53239 springs have been mapped across the state. Factors such as discharge, water quality, accessibility, and community dependency are assessed to identify critical springs requiring immediate attention. 3090 springs are being monitored regularly to monitor any variances and plan any necessary interventions. Village community facilitators (VCF) and Spring Field Associates (SFA) are equipped with water testers, tablets, and GIS mapping apps to collect and monitor the springs. In addition, Springshed Management of identified critical springs in CLLMP villages are being carried out regularly. By empowering local communities through knowledge and technology, CLLMP is actively ensuring the preservation of Meghalaya's springs and safeguarding this valuable resource for future generations.

UNLEASHING THE AROMAS OF MEGHALAYA

Cultivating a Fragrant Legacy

In 2019, the State Government launched the Megh-Aroma Mission to rehabilitate Meghalaya's vast wastelands, which accounted for over 17% of its total geographical area. The mission aims to empower farmers by cultivating medicinal and aromatic plants (MAPs) and is supported by CSIR-CIMAP, a multidisciplinary research institute focused on biological and chemical sciences and providing technology support to farmers.

Led by the Institute of Natural Resources, Meghalaya (INR), the mission promoted the large-scale cultivation of aromatic crops such as lemongrass, citronella, vetiver, geranium, lavender, and peppermint. Over 3000 farmers have participated in the initiative, leading to the revitalization of rural areas and the generation of employment opportunities.

Since its inception, wastelands spanning 520 hectares have been reclaimed and transformed into flourishing landscapes teeming with aromatic plants. The Mission has also produced 13-15 metric tons of essential oils to meet the growing demands of the market.

Meghalaya's aromatic revolution extends beyond economics—it showcases sustainable agriculture, preservation of natural heritage, and the empowerment of farming communities.

REVITALIZING INDIGENOUS FOOD SYSTEMS

Empowering Communities through agroecology learning circles

In 2021, MBMA in collaboration with NESFAS implemented the "Empowering Indigenous Communities through Agroevology Learning Circles (ALC). This project combines agroecology principles with participatory research to empower indigenous communities and foster sustainable local food systems. ALCs aim to revive traditional agroecology practices, stimulate local innovation, and explore natural resource management. It focuses on land planning, seed selection, pest management, and soil conservation to enhance community resilience.

Covering 100 villages across 9 districts, representing the Khasi, Garo, and Jaintia indigenous communities, the project directly supports 2039 farmers and indirectly impacts over 1,500 farmers. By integrating traditional knowledge with technological innovation, ALCs provide innovative solutions to environmental challenges and promote governance and technological advancements in agriculture. This holistic approach also ensures the sustainable development of indigenous communities.

JINGKIENG JRI

An equitable nature-culture-based vision by indigenous communities of Meghalaya

Jingkieng Jri or Living Root Bridges constitute an exceptional collaboration between humans and nature. Nurtured by indigenous Khasi-Jaintia communities over centuries, these Ficus-based solutions celebrate the ethos of profound cooperation and ingenuity. Recognizing the threats to these ecosystems from complex socio-economic-ecological factors, an inspiring community-led movement has resulted in the formation of 26 Mariang Jingkieng Jri Cooperative Societies.

As part of the CLLMP project, various conservation-development works are underway. These include Jingkieng Jri site conservation, community nurseries, nature homes, and nature-based livelihoods. In addition, novel research initiatives are being initiated to nurture genuine alliances between ancient knowledge and contemporary science. This initiative is not only contributing towards the UNESCO World Heritage Status of Jingkieng Jri / Lyu Chrai Cultural Landscape, and informing Meghalaya's journey towards equitable development, but it's also nurturing a model for balanced growth.

In establishing these Cooperatives voluntarily, this initiative celebrates the collective wisdom of our ancestors and renews the potential of Cooperation in addressing complex contemporary challenges. Through this, Jingkieng Jris' are beginning to inspire all stakeholders to reimagine our future as a future of the collective. A total of 46 villages have come together to form the Syrwet U Barim Mariang Jingkieng Jri Cooperative Federation, fostering a deeper community collaboration and resilience.

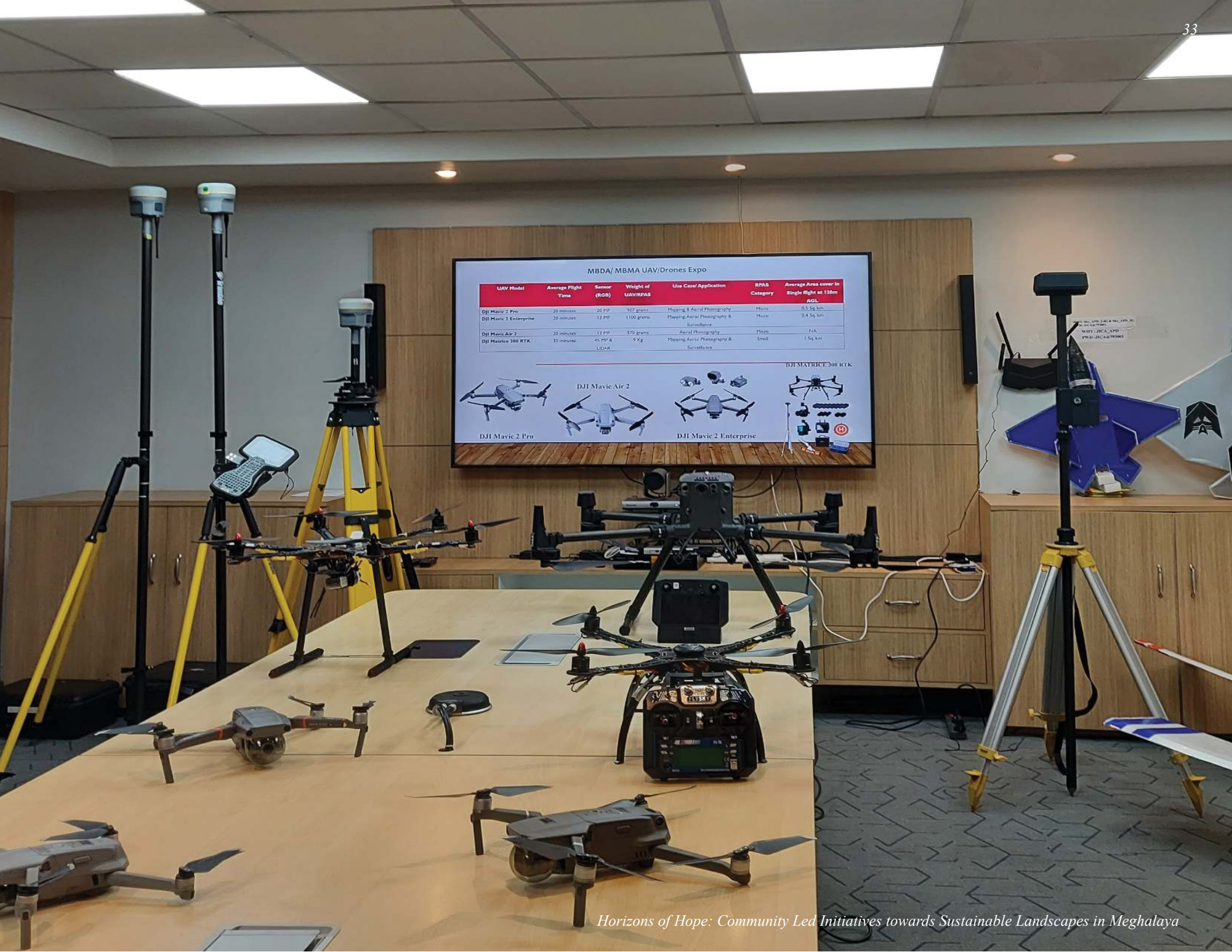
Mapping Change

The Role of Geospatial Technology in Enabling Meghalaya's Communities

In 2015, the GIS lab was established with the aim of providing technical and technological support to its various projects and programs. The lab utilized geospatial applications and tools to assist in planning, monitoring, and management activities. Key functions include generating detailed maps of boundaries and land use/land cover, creating thematic geospatial data and statistics, and composing informative maps that aided planning and decision-making.

In addition to resource mapping and data generation, the GIS lab placed significant emphasis on capacity building. It conducted regular training programs, workshops, and exposure visits to impart GIS knowledge and skills to local youth and professionals. Through these initiatives, the lab not only increased the efficiency of project implementation but also empowered communities to actively adopt technology and participate in sustainable development works.

The lab's determined efforts were recognized and honoured with the prestigious National Geospatial Awards (FICCI) for Geospatial Excellence in Sustainable Development for works and contributions under CLLMP. This accolade acknowledged their exceptional use of GIS skills and tools, as well as their dedication to empowering local communities through education and training.


MBDA/ MBMA UAV/Drones Expo
UAV Model
Average Flight Time
Sensor (RGB)
Weight of UAV/RPAS
Use Case/ Application
RPAS Category
Average Area cover in Single flight at 120m AGL
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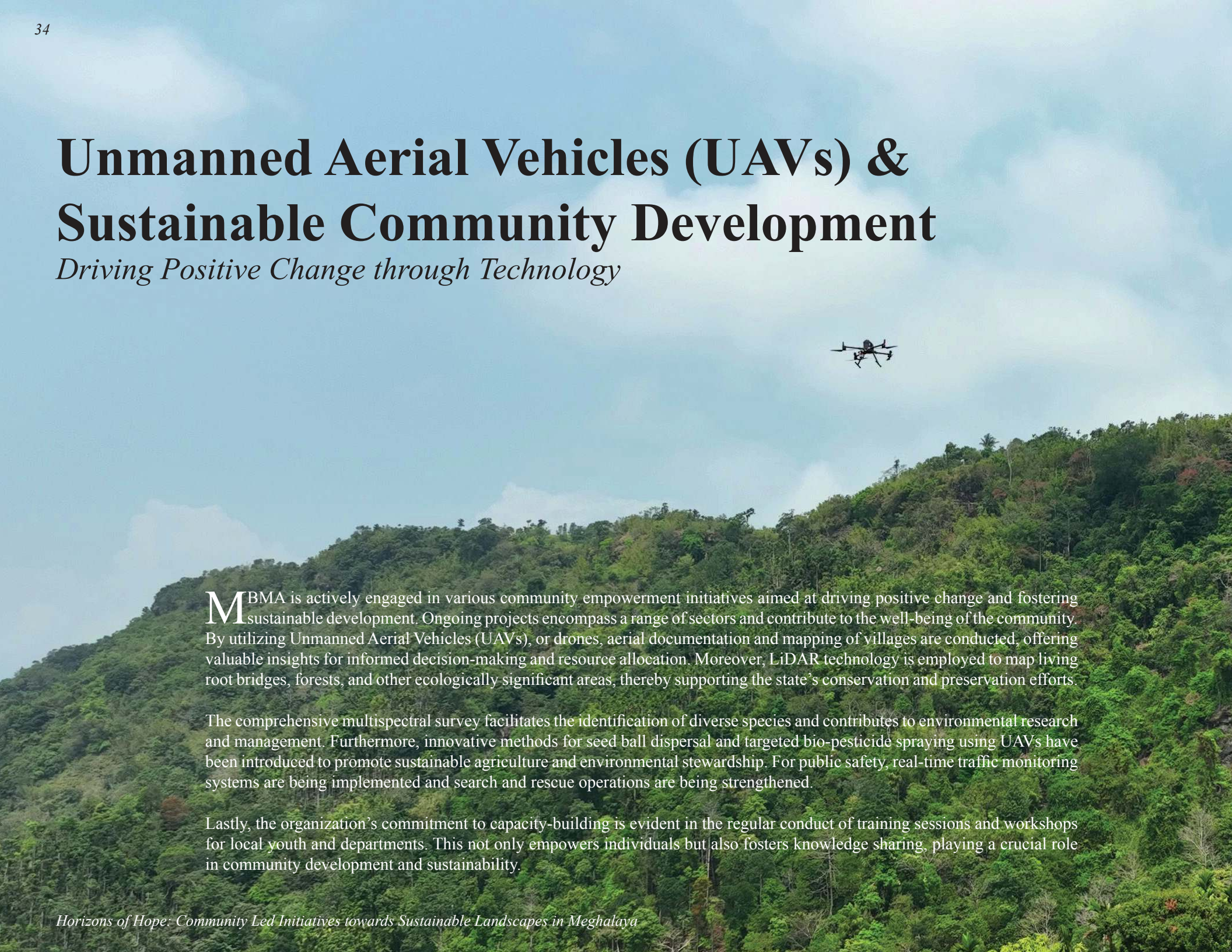
Unmanned Aerial Vehicles (UAVs) & Sustainable Community Development

Driving Positive Change through Technology



MBMA is actively engaged in various community empowerment initiatives aimed at driving positive change and fostering sustainable development. Ongoing projects encompass a range of sectors and contribute to the well-being of the community. By utilizing Unmanned Aerial Vehicles (UAVs), or drones, aerial documentation and mapping of villages are conducted, offering valuable insights for informed decision-making and resource allocation. Moreover, LiDAR technology is employed to map living root bridges, forests, and other ecologically significant areas, thereby supporting the state's conservation and preservation efforts.

The comprehensive multispectral survey facilitates the identification of diverse species and contributes to environmental research and management. Furthermore, innovative methods for seed ball dispersal and targeted bio-pesticide spraying using UAVs have been introduced to promote sustainable agriculture and environmental stewardship. For public safety, real-time traffic monitoring systems are being implemented and search and rescue operations are being strengthened.

Lastly, the organization's commitment to capacity-building is evident in the regular conduct of training sessions and workshops for local youth and departments. This not only empowers individuals but also fosters knowledge sharing, playing a crucial role in community development and sustainability.

LiDAR sensor image of a Living Root Bridge

Meghalaya's Seedball Revolution

Forest Regeneration with Future Generations Leading the Way

A unique and easy-to-adapt method in afforestation, seedballs offer a scalable, cost-effective, and low-maintenance approach to planting trees, making them ideal for community involvement. Meghalaya faces many challenges brought about by deforestation, resulting in the loss of water sources, fertile soil, and the devastation of ecosystems by landslides, floods, and climate change. The seedball initiative was designed as a way to combat forest loss at the grassroots and has been implemented in 46 blocks across 11 districts of the state. School children have been identified as the main agents of the state-wide seedball dispersion program. In a remarkable display of participation, 75,000 children from 1,840 schools were trained. To ensure success, a dedicated team was assembled, comprising 261 Village Community Facilitators, 11 training specialists, external experts, and the district units of MBMA. Through this collaborative effort, the children successfully created an astounding 3.5 million seedballs.

The process of seedball preparation itself is a unique craft that requires a blend of locally sourced materials. Extensive research into the local ecosystems has guided the selection of plant species for the seedballs. A crucial parameter in choosing these species is the benefits they can provide to the communities once they reach maturity, thereby creating a symbiotic relationship between nature and people.

Promoting Conservation through Community-Led Forest Management

The preparation of the Forest Management Plan for all the 400 villages selected under CLLMP has been done with the involvement of community members. Training of local youths identified as VCFs, in the methodology and field works of Forest Inventory has led to major capacity development in the communities of a technical and specialized kind.

The main objectives of the FMPs are to ensure biodiversity conservation and sustainable management of forest resources leading to a pathway for sustained income generation from the community and privately owned forests in the form of scientifically determined sustainable yield.

Field work for forest inventory was done by the Village Community Facilitator (VCFs). 1200 VCFs were trained in Forest measurements. 1,10,245 ha of forests has been brought under scientific management. FMPs of more community forests are being prepared.

These FMPs are also a base document for preparation of “Working Schemes” of the forests which in turn will open up income generating opportunities of timber production based on the sustainable yield.

GREEN Meghalaya

Fostering Community Involvement in Forest Conservation

96% of Meghalaya's forests are owned by local communities. Recognizing this unique relationship between the people and their forest lands, GREEN Meghalaya was conceptualized to capitalize on community ownership, incentivize conservation, and promote best practices in natural resource management. Implemented by MBMA via CLLMP adopting the Payment for Ecosystem Services (PES) model, GREEN Meghalaya incentivizes forest owners and communities who meet specific conditions and categories in preserving the forests.

Since its launch in June 2022, GREEN Meghalaya has made remarkable strides. In its first phase, Rs. 14.14 crores was released to 890 beneficiaries. With the commencement of the second phase, an additional Rs. 8.3 crores has been earmarked for disbursement to 611 beneficiaries, further empowering those who are committed to preserving their forests.

The project involves immense groundwork, including reaching out to some of the most inaccessible rural stretches for awareness programs, myth-busting, and confidence-building interactions, as well as intensive data collection. The collected data allows the categorization of forests and determines the financial compensation to be received by the beneficiaries. Since initiation, the response has been positive. Over 27,000 hectares of forest lands have come under the protective umbrella of GREEN Meghalaya, surpassing half of the initial goal in less than a year.

SALT

Empowering Meghalaya's Farmers while Preserving its Pristine Beauty

An innovative agricultural approach known as Sloping Agriculture Land Technology (SALT) is revolutionizing farming practices in Meghalaya while preserving the state's natural beauty. Meghalaya's rolling hills and heavy rainfall present challenges such as erosion and water run-off, endangering fertile soil and water quality. SALT addresses these issues by creating hedgerows of nitrogen-fixing plants along land contours, effectively controlling water flow and conserving valuable resources.

SALT empowers farmers by minimizing the need for extensive labour and external inputs. By cultivating diverse crops between hedgerows, it ensures food security and economic growth. The innovative method also integrates small livestock, cultivating leguminous fodder species for sustainable animal feed and utilizing composted animal dung to maintain soil fertility.

As the region faces the impacts of climate change, SALT equips farmers with strategies for climate resilience. By reducing greenhouse gas emissions and improving soil fertility, it contributes to a greener and more sustainable future for Meghalaya. Recognizing the potential of SALT, CLLMP has implemented successful pilot projects and selected 1250 farmers for demonstrations.

SAFEGUARDING THE STATE BIRD

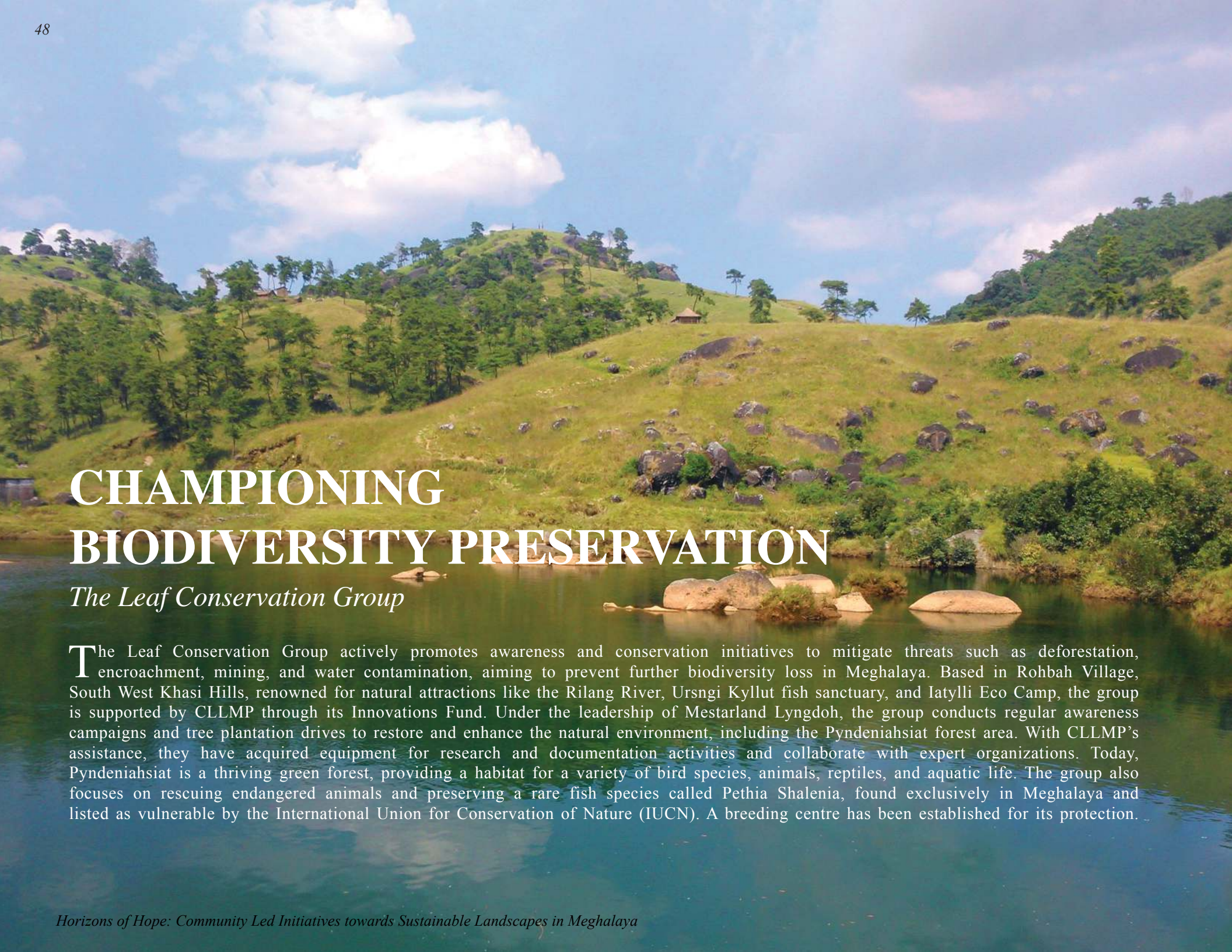
Umpung & Laitumsaw

Umpung Village in the South West Khasi Hills took action to protect Meghalaya's Hill Myna when its population faced a rapid decline. Concerned about the birds' capture and sale at black markets, village leaders collaborated with organizations like the World Wildlife Fund and International Conservation Services to address the issue. They enacted strict laws, patrolled breeding areas, and built nests for the birds. The efforts of Umpung Village were supported by CLLMP, which helped fund activities including the declaration of a sanctuary, installation of nesting places, and development of the area for ecotourism. A significant impact of Umpung's initiatives is inspiring neighboring villages like Laitumsaw to adopt similar practices. CLLMP also supports Laitumsaw's conservation activities, including nest construction and the preservation of privately-owned lands. Challenges remain in conserving the ecosystem on such lands, but solutions such as acquiring more land and tree plantation drives are underway. The commitment and collaboration of these communities have resulted in a secure habitat for Hill Mynas and the revitalization of their population in the region.

REVIVING KARITCHI

Dharmen Momin

Dharmen Momin, an entrepreneur from West Garo Hills, is promoting a traditional indigenous soda known as Karitchi. Dharmen is driven by a mission to preserve the Garo Hills' rich cultural heritage and promote local cuisine. His entrepreneurship was highlighted at the "Indigenous Terra Madre" event in 2015, generating keen interest from buyers. Securing support funding under CLLMP enabled Dharmen to start commercial sales, resulting in significant profits of Rs. 90,000. His product has also been successfully registered with FSSAI, ensuring its compliance with food safety standards. Beyond business, Dharmen actively advocates for biodiversity conservation and embraces a vegetarian lifestyle out of his profound love for animals and birds. In recognition of his environmental contributions, Dharmen received the Meghalaya Excellency Award 2023 for Environment Protection, along with a cash prize of Rs. 1,00,000. Through the promotion and revitalization of Karitchi, Dharmen empowers the community while preserving the distinctive identity of Garo Hills for future generations.



CHAMPIONING BIODIVERSITY PRESERVATION

The Leaf Conservation Group

The Leaf Conservation Group actively promotes awareness and conservation initiatives to mitigate threats such as deforestation, encroachment, mining, and water contamination, aiming to prevent further biodiversity loss in Meghalaya. Based in Rohbah Village, South West Khasi Hills, renowned for natural attractions like the Rilang River, Ursngi Kyllut fish sanctuary, and Iatylli Eco Camp, the group is supported by CLLMP through its Innovations Fund. Under the leadership of Mestarland Lyngdoh, the group conducts regular awareness campaigns and tree plantation drives to restore and enhance the natural environment, including the Pyndeniahsiat forest area. With CLLMP's assistance, they have acquired equipment for research and documentation activities and collaborate with expert organizations. Today, Pyndeniahsiat is a thriving green forest, providing a habitat for a variety of bird species, animals, reptiles, and aquatic life. The group also focuses on rescuing endangered animals and preserving a rare fish species called Pethia Shalenia, found exclusively in Meghalaya and listed as vulnerable by the International Union for Conservation of Nature (IUCN). A breeding centre has been established for its protection.

RECLAIMING MINE SPOILED LANDS

Kyrsiew Ryngkhlem

Like many farmers in East Jaintia Hills, Kyrsiew Ryngkhlem from Wapung Skur Village faced the challenge of infertile farmlands due to coal mining. Determined to find a solution, she developed a unique and low-cost innovation to restore mine-spoiled soil. Initially, she started small-scale organic manure-making by collecting grass, drying it, and mixing it with cow dung and other biodegradable waste. Encouraged by the results, Kyrsiew bought a plot of uncultivable land and used limestone to neutralize the soil's acidity. Within three years, her innovation bore fruit, resulting in abundant vegetable growth and improved soil health. Recognizing her efforts, the CLLMP project provided funding of Rs. 3.3 lakhs to support and expand Kyrsiew's activities. She utilized the funds to build compost tanks and sheds for cows, pigs, and goats. To date, she has produced 2 tonnes of organic manure, selling 1.79 tonnes to over 500 farmers cultivating across 300 hectares of land. Kyrsiew's achievements gained attention at various events, including buyer-seller meets, where she showcased her innovation and exchanged knowledge with other entrepreneurs and farmers. In her village, Kyrsiew shares her expertise by providing training on land rehabilitation and organic manure production to fellow farmers and members of the Village's NRM Committee.

CONVERTING PLASTIC WASTE INTO ECO-FRIENDLY FUEL

Just Synrem

Just Synrem, a resident of Mylliem Village, addresses the pressing issue of plastic waste through the innovative pyrolysis process, converting it into eco-friendly fuel. With global plastic recycling rates below 5% and projections of a 3.8% increase in plastic production by 2030, effective solutions are crucial. Just's machines can convert one kilogram of plastic waste into 500 to 600 units of pyrolysis oil, suitable for powering bikes and generators. Recognizing the significance of his initiative, the CLLMP project has provided Rs. 5 lakhs in support. Just plans to utilize the funding to establish an electric supply connection, enabling the repurposing of the machine-emitted oil as fuel. Excess oil can be utilized in various devices, including generators, automobiles, cement mixers, and vibrators. Moreover, Just aims to mobilize the community and encourage active participation in waste management efforts. His pioneering approach not only reduces plastic waste but also promotes the production of eco-friendly fuel, demonstrating a commitment to environmental sustainability.


Hard Metal

INNOVATIVE CLEAN FARMING

Jorsing Syngkli

70-year-old Jorsing Syngkli has been cultivating paddy for decades. However, it was only in recent years that he was able to consistently manage pests using organic methods. Throughout his farming journey, he always preferred using organic alternatives over the comparatively more expensive chemical pesticides. Jorsing dedicated years to finding an eco-friendly farming solution for pests by tapping into resources such as well-founded traditional knowledge.

Over time, he succeeded in developing a homemade, low-cost organic bio-pesticide that has since demonstrated to be just as effective as its chemical counterparts. His invention has not only provided a solution for his own crops but also for fellow all-organic farmers in the region. CLLMP's commitment to support and scale up grassroots innovations led to support funding of Rs. 3 lakhs. He has since utilized the support to establish a 5,000-square-foot nursery for raising saplings of essential ingredients. A small retail outlet has also been set up for storing and selling his organic pesticide. To date, 600 bottles have been sold to 120 farmers who cultivate a total of 200 hectares of farmland. Each bottle is priced at only Rs. 15, making it an affordable and accessible option for farmers and reducing their dependence on harmful chemicals.

MAWTNENG VILLAGE

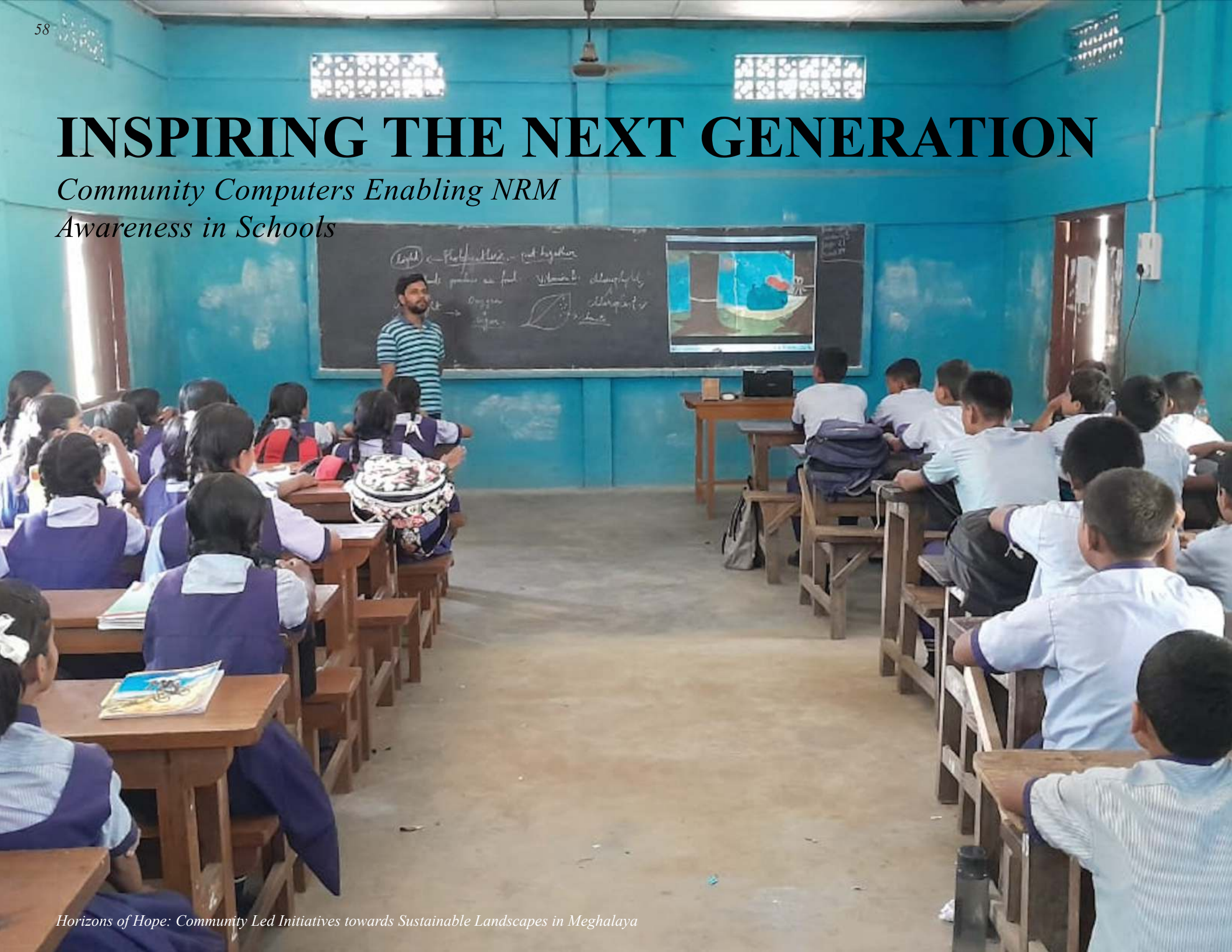
Exemplifying Green Initiatives

Mawtneng Village in Ri Bhoi, designated a "Green Village '' by environmental organizations from Germany and Belgium, stands as a model environmentally conscious community known for its progressive NRM efforts. On World Environment Day in 2018, the village launched an initiative committing to the "Preservation & Protection '' of the environment and ecosystems.

Mawtneng employs unique governance practices where the headman oversees the implementation of works through committees responsible for biodiversity, green household, youth welfare & development, pond development, joint forest management, community green squad, and village water & sanitation. The community actively participates in decision-making for development, offering a blueprint for effective sustainable NRM governance in neighbouring villages. CLLMP has provided Rs. 5 lakhs to sustain Mawtneng's initiatives. Notable highlights include grass-carpeting to prevent soil erosion, kitchen gardens in 70 households for food self-sufficiency, and the planting of wild fruits, flowers, and trees to enhance biodiversity. The village promotes eco-friendly alternatives to plastic bags, nurtures indigenous flora in nurseries, encourages responsible fishing through a community fishery pond, and has constructed a green museum.

INSPIRING THE NEXT GENERATION

Community Computers Enabling NRM Awareness in Schools



CLLMP is spearheading an initiative to empower schools with community computers, aiming to enhance awareness of Natural Resource Management (NRM). A total of 720 computers have been distributed across the state, with the goal of revolutionizing education and inspiring students to become environmental stewards and champions of sustainable practices from an early age.

The impact of this initiative extends beyond academic subjects. Teachers have provided positive feedback, highlighting the effectiveness of teaching methods and increased student engagement resulting from the integration of technology in classrooms. Students are benefiting from interactive learning experiences that make classes more captivating and foster knowledge sharing.

Equally important is the project's awareness initiative, which supports the state's commitment to transformative education. By equipping students with the knowledge and skills necessary to make informed decisions about sustainable practices, Meghalaya is nurturing a generation that values and safeguards its natural resources. The community computers also serve as catalysts for collaboration, enabling schools to connect, share ideas, and learn from one another.

PROMOTING GENDER EQUALITY

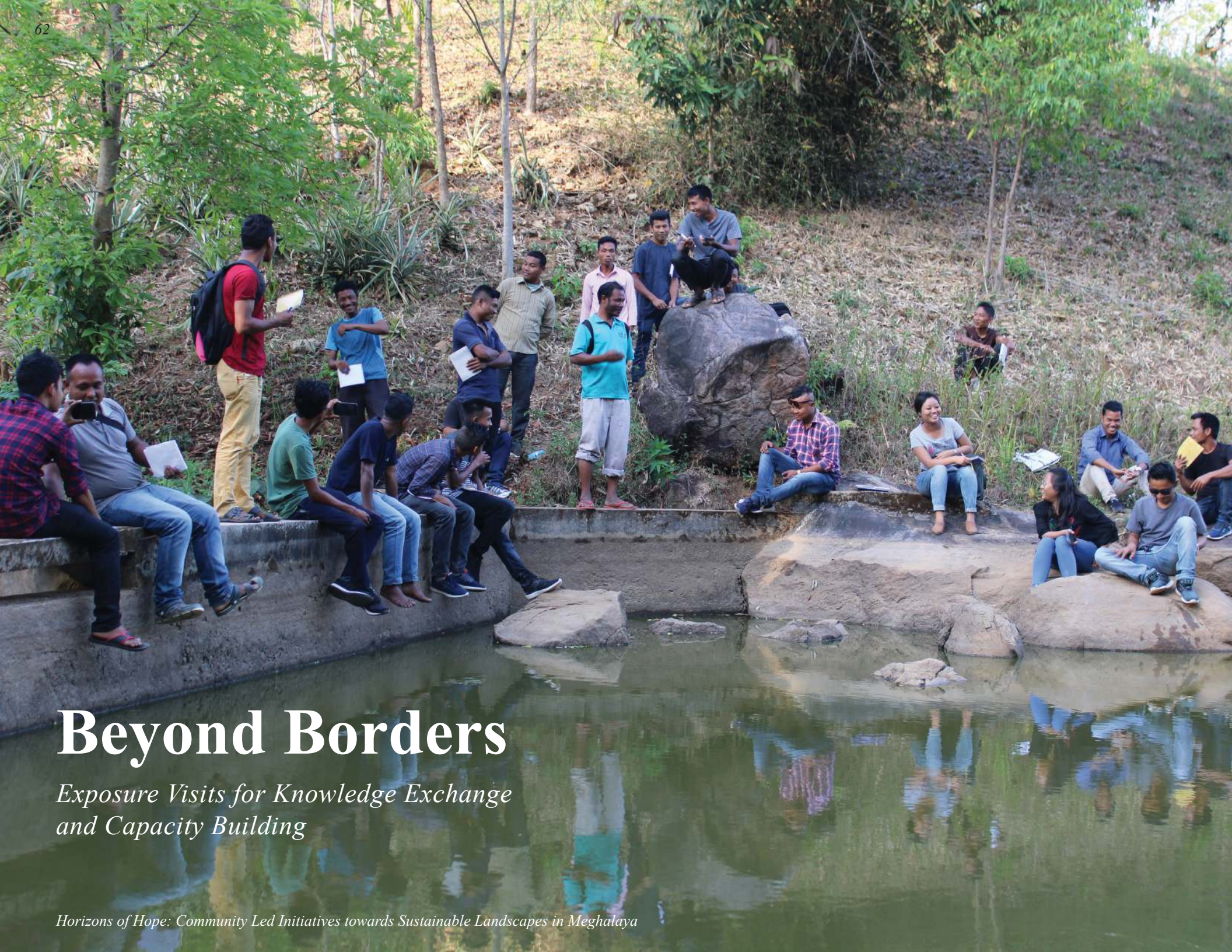
CLLMP's Inclusive Approach

Gender equality lies at the heart of CLLMP, supported by a robust Social Management Framework that prioritizes women's active engagement. With 55,749 households enrolled as General Body Members, a significant 59% are women, reflecting their vital role in decision-making. Among the 1,200 Village Community Facilitators (VCFs), 36% are women, contributing to diverse perspectives and inclusive governance.

To ensure women's representation, all Village Natural Resource Management Committees (VNRMCs) are mandated to have at least 50% women members. Remarkably, women hold key positions, such as secretary in 326 executive committees and president in 74 committees.

CLLMP prioritizes gender equity through equal pay for men and women, promoting economic empowerment. Women-led self-help groups operate nurseries and vermicomposting units, providing income-generating opportunities and enhancing financial independence.

Emphasizing inclusivity, CLLMP creates a more equitable society where every voice is heard, and all individuals contribute to the sustainable development of their communities.



Beyond Borders

Exposure Visits for Knowledge Exchange and Capacity Building

The CLLMP project has effectively organized exposure visits, engaging 1,053 individuals at the regional level, 178 at the national level, and 50 at the international level. These visits have significantly contributed to capacity building, with the community actively participating.

Communities from our project participated in the following noteworthy exposure visits:

1. The UNESCO Sub-regional Conference on World Heritage in Bhopal, Madhya Pradesh.
2. The Cop 27 SUMMIT in Sharm El-Sheikh, Egypt.
3. The 21st Triennial General Assembly of ICOMOS in Sydney.
4. The 9th World Water Forum in Diamniadio (Dakar), Senegal, West Africa.

Exposure visits facilitated a platform for the exchange of ideas, methodologies, and practices between the participants and the visited sites or organizations. This cross-pollination of ideas was a significant driver for innovation and improved project implementation. Participants returned with a renewed sense of motivation, and armed with novel ideas and techniques, they helped in advancing the project.

The learning and experiences from the exposure visits significantly contributed to capacity building. It enabled participants to acquire new skills, upgrade their existing skills, and understand how to adapt their learning to their local context. This capacity building has had a direct positive impact on the project's efficacy and its long-term sustainability.

CELEBRATING SUCCESS

Awards for Meghalaya's Community-led Landscape Management Project

The Community-led Landscape Management Project (CLLMP) implemented by the Meghalaya Basin Management Agency (MBMA) has been honored with prestigious awards, recognizing its exceptional contributions and achievements. At the 3rd National Water Awards, Aminda Simsangre village secured the 2nd position in the 'Best Village Panchayat - North East Zone' category.

MBMA's CLLMP also received the FICCI National Geospatial Award for Geospatial Excellence in Sustainable Development. Through the initiative, over 14,000 youth were trained in geospatial technologies, enabling them to contribute to forest management, resource planning, and data collection. Among the accolades, Mawkyrdep village earned the 3rd rank in the highly competitive Best Village Panchayat category of the National Water Awards 2022. The village implemented 26 interventions under the CLLMP, addressing local natural resource management challenges and focusing on water scarcity during lean seasons. Their inclusive approach involving women, youth, and vulnerable groups contributed to their remarkable success.

These awards recognize the dedication and collective efforts of the communities, MBMA, and stakeholders involved in the CLLMP. They highlight the significant impact of community-led initiatives in promoting sustainable development and resilience in Meghalaya.

We express our heartfelt appreciation to all individuals, communities, and organizations who contributed to the CLLMP's success. Let these awards inspire us to continue working towards a prosperous and sustainable future, guided by community-led initiatives and responsible resource management.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