



# ANNUAL REPORT 2025

THE YEAR  
**2025**



A vertical photograph on the left side of the page shows a vast mountain range under a clear sky. In the foreground, a small village with white buildings and a prominent red-roofed structure is nestled on a hillside. The mountains in the background are partially covered in snow or light-colored rock, and the overall scene is bathed in the warm, golden light of a low sun.

Over the past year, GHE strengthened its work across some of India's most remote and climate-vulnerable regions expanding access to clean energy, education, healthcare and sustainable livelihoods.

Community-led renewable energy solutions powered homes, schools and health centres enabling safer healthcare, digital learning and cleaner kitchens.

Alongside infrastructure, GHE invested in people, training local youth as solar technicians, supporting women artisans and enabling rural families to build income through responsible tourism and homestays.

This year marked a deeper shift toward community ownership, where local systems are increasingly managed and sustained by the communities themselves.

As GHE continues to expand its reach, the focus remains on building resilient, inclusive and locally driven development models that endure.

# THE YEAR AT A GLANCE

Over more than a decade of work, GHE has partnered with communities, governments and institutions to deliver integrated development solutions across India's most remote regions. From clean energy access to livelihoods, education and healthcare, the impact below reflects cumulative progress achieved since 2013—driven by community ownership and sustained local systems.



Lives Impacted

**1.3 Million**  
Since 2013

**1.4 MW**

Solar Power Since 2013



Clean Energy  
Installed



Carbon reduced

**820,000**  
Tonnes Annually

**3,500**  
In Livelihood



People Trained



Income  
Generated

**\$ 300,000**  
By Micro Enterprises

**1,354**  
Direct and Indirect



Employment  
Generated

# OUR FOOTPRINT

For over 14 years, GHE has worked across some of India's most remote regions, supporting community-led clean energy and sustainable development initiatives. Our footprint spans the Himalayas, the Northeast and emerging rural landscapes, where local communities are trained to manage and sustain energy, livelihood, education and healthcare systems.

In 2025, GHE expanded into Chhattisgarh, while continuing to deepen its presence across states such as Maharashtra.



# IMPACT EXPEDITIONS

Since 2013, expeditions have been central to how we work, bringing people, partnerships and purpose together in some of the country's most remote regions. What started as on-ground journeys to deliver clean energy and essential infrastructure has evolved into platforms for leadership, learning and community-led action.

In 2025, staying true to this legacy, GHE conducted **Impact Expeditions**, engaging women leaders, students and future leaders in hands-on climate and development work. Each expedition continued the same core principle that shaped our earliest efforts: meaningful impact is built through presence, collaboration and shared responsibility on the ground.



# Women Leaders EXPEDITION



The Women Leaders Expedition brought together women leaders from diverse parts of the world for an immersive journey across Ladakh, highlighting the region's landscapes, heritage and women-led initiatives. From the high-altitude sand dunes of Sumur to stories of the historic Silk Route, the experience offered a deeper understanding of how culture and resilience shape life in the mountains. The cohort visited a women-operated Pashmina centre in Man village near Pangong Lake and spent time with Changpa nomadic communities, engaging closely with local enterprise, craft traditions and pastoral livelihoods.

The expedition culminated at Hanle Nunnery, where participants witnessed and supported the installation of solar power and clean heating systems. Here, the focus turned to practical climate action, understanding firsthand what it takes to set up reliable clean energy solutions in extreme high-altitude conditions and how such efforts strengthen long-term community resilience

**20.53 TONS**  
CARBON FOOTPRINT  
OF THE EXPEDITION

**4.90 TONS**  
OVERALL CARBON  
REDUCTION ANNUALLY

**73.50 TONS**  
OVERALL CARBON  
REDUCTION 2040

# Future Leaders Expedition

The Future Leaders Expedition brought changemakers to Hanamur, Ladakh, to work alongside local communities on climate-positive energy and livelihood solutions.

During the expedition, high-efficiency space-heating systems were installed in village homes, reducing firewood use, improving indoor comfort and lowering emissions in one of the coldest inhabited regions in India. These systems now provide reliable warmth while protecting health and fragile mountain ecosystems.

At the same time, the expedition generated direct economic value for local families through homestays, trekking services and local sourcing, ensuring that climate action also translated into immediate livelihood benefits.



**26.25 TONS**  
CARBON FOOTPRINT  
OF THE EXPEDITION

**23.5 TONS**  
OVERALL CARBON  
REDUCTION ANNUALLY

**352.5 TONS**  
OVERALL CARBON  
REDUCTION 2040



# Student Leaders EXPEDITION

The Student Leaders Expedition brought young changemakers to Ladakh to work alongside local communities on clean energy and climate solutions.

At Hunder Gompa and Hunder Dok village, students supported the installation of solar microgrids and high-efficiency rocket stoves, improving energy access, indoor comfort and air quality in homes and community spaces. These systems are helping reduce firewood use while creating healthier, more resilient living environments.

**80.53 TONS**  
CARBON FOOTPRINT  
OF THE EXPEDITION

**98.7 TONS**  
OVERALL CARBON  
REDUCTION ANNUALLY

**1480 TONS**  
OVERALL CARBON  
REDUCTION 2040



## 2025 Leadership EXPEDITION

Under the Beyond the Boardroom initiative, Tata Communications' senior leadership visited Meghalaya to experience real impact on the ground. The team was involved in the installation of solar microgrids in an off-grid village and also setup clean cooking solutions for local families.

From lighting homes to creating healthier kitchens, the expedition showed how leadership can go beyond the corporate boardrooms and create meaningful, lasting change in communities.

**18.31 TONS**  
CARBON FOOTPRINT  
OF THE EXPEDITION

**65 TONS**  
OVERALL CARBON  
REDUCTION ANNUALLY

**975 TONS**  
OVERALL CARBON  
REDUCTION 2040



# CLEAN ENERGY TRANSITION

For communities far from centralised infrastructure, energy access is about far more than electricity and it shapes health, education, livelihoods and dignity.

GHE's clean energy transition approach ensures that households, institutions and local enterprises have access to reliable, affordable, climate-friendly power.

Across the Himalayas, the Northeast and other rural regions, GHE deploys decentralised solutions such as solar microgrids, space-heating systems, clean cooking technologies and community lighting.

Each intervention is paired with local training and ownership models, enabling communities to operate and maintain their systems thereby turning energy access into a foundation for long-term resilience and self-reliance.





## SOLAR BASED ELECTRIC PRESSURE COOKING

In the forested and off-grid regions of Northeast India, cooking has long depended on firewood, filling homes with smoke and placing heavy burdens on women and forests alike.

GHE's **Solar-based Electric Pressure Cooking program** is changing this reality. By powering clean, efficient cookers with household solar systems, families in regions such as the Garo Hills are shifting from smoke to solar, reducing indoor air pollution, cutting firewood use and improving everyday health and comfort.

Through community engagement, training, and accessible financing, these systems are designed to be owned and sustained locally. For thousands of households, clean cooking is no longer a distant promise but a practical step toward healthier lives and climate-resilient communities.

# SPACE HEATING SOLUTIONS

In the high-altitude villages of Ladakh, winter temperatures drop far below zero, making warmth a matter of survival.

GHE is providing a clean and efficient space-heating solution for households that have traditionally relied on smoky, fuel-intensive fires.

These high-efficiency **Rocket stoves** use significantly less firewood while delivering more consistent heat—keeping homes warmer, healthier and safer through the harsh winter months.

By reducing indoor air pollution and pressure on fragile mountain forests, the program improves both public health and environmental sustainability.



# SOLAR BASED ELECTRIFICATION

Across the remote villages of Northeast India, limited or unreliable grid power has long restricted access to education, healthcare and economic opportunity.

GHE addresses this gap through **decentralised 1 kVA and 2 kVA solar microgrid systems** that deliver clean, reliable electricity to individual households and community institutions. These solar based systems are designed for simple local maintenance, making them well suited to rugged, off-grid environments.

By enabling villages to move up the energy ladder—from basic lighting to powering appliances, schools, health centres and small enterprises, solar electrification is unlocking safer living conditions, longer study hours and new livelihood opportunities. With local youth trained as technicians, these energy systems become community-owned assets built to last.



# LIGHTING UP THE STREETS

Solar street lights provide safe, reliable lighting for village streets, footpaths and public spaces. They also become a centre where kids can play in the dark.

Installed across remote settlements, these stand-alone solar units improve night-time safety, extend hours for local activity and support everyday mobility after dark. With no dependence on the grid and minimal maintenance, they offer a practical and durable solution for community lighting.

**SIMPLE INFRASTRUCTURE. POWERFUL IMPACT.**



# CARBON FINANCING

GHE uses carbon financing to scale and sustain its smokeless cookstove program across remote communities.

By replacing traditional firewood stoves with efficient, smokeless cookstoves, GHE significantly reduces carbon emissions while improving indoor air quality and protecting local forests. These emission reductions are verified and converted into carbon credits, generating climate finance from global markets.

The revenues from carbon credits are reinvested into the communities, supporting cookstove maintenance, local monitoring, livelihoods and further deployment. This creates a self-sustaining model where clean cooking not only benefits health and the environment, but also funds long-term community development.





## CLEAN COOKING CLEANER KITCHENS

GHE's clean cooking program replaces smoky, firewood-based stoves with efficient, smokeless cookstoves that protect health, forests and the climate.

By reducing indoor air pollution and cutting firewood use, these cookstoves lower carbon emissions while improving daily life for women and families. The verified carbon savings generated through this transition are used to unlock climate finance, creating a self-sustaining model that goes beyond one-time distribution.

Carbon revenues are reinvested into local communities to support maintenance, livelihoods and further development, ensuring that clean cooking becomes a long-term, community-owned solution rather than a short-term intervention.



## SKILL DEVELOPMENT

Skill development is a core pillar of GHE's strategy for enabling sustainable and inclusive rural growth.

Across the regions where we operate, clean energy investments are complemented by structured training programs that equip women and youth with practical, market-relevant skills. These initiatives span renewable energy, hospitality and traditional crafts - including strengthening value chains around Pashmina in Ladakh and Eri silk in the Northeast.

By supporting artisans with quality improvement, market linkages and storytelling around their craft, GHE helps communities preserve heritage skills while enhancing incomes.

Together, these efforts enable families to translate infrastructure, natural resources and cultural assets into viable, dignified livelihood opportunities that are resilient, locally rooted and future-ready.



## WOMENS PASHMINA **ARTISANS HUB**

Women's Pashmina Artisans Hub setup in Ladakh, supports local women to build sustainable livelihoods through one of the region's most valued heritage crafts.

Through structured training in spinning, weaving, dyeing and quality control, the locally trained women artisans are equipped to produce high-quality Pashmina products that meet national and international market standards. The hub also provides access to tools, design inputs and market linkages, enabling artisans to move from informal production to organised, income-generating enterprise.

By combining traditional knowledge with modern skills and clean energy-powered workspaces, the program strengthens economic independence for women while preserving Ladakh's cultural heritage and craft ecosystems.



# ERI SILK CRAFTS CENTER

GHE's Eri Silk Craft Centre supports women artisans in Northeast India to transform traditional weaving into sustainable livelihoods.

Through skills training, improved tools and access to markets, the centre enables producers to enhance quality, increase incomes and strengthen the value of locally made Eri Silk. By linking heritage craft with modern enterprise, the program helps preserve cultural traditions while building economic resilience.



# RESEARCH & STRATEGIC ADVISORY

GHE's research and advisory work supports governments, institutions and communities to plan for sustainable futures.

Through field-based studies, historical mapping and strategic frameworks, this work informs tourism development, heritage conservation and locally led economic growth in frontier and fragile regions.

Across regions such as Arunachal Pradesh and Ladakh, GHE combines on-ground assessments with cultural and historical research to shape sustainable tourism circuits, document shared heritage and identify pathways for long-term, community-driven development.



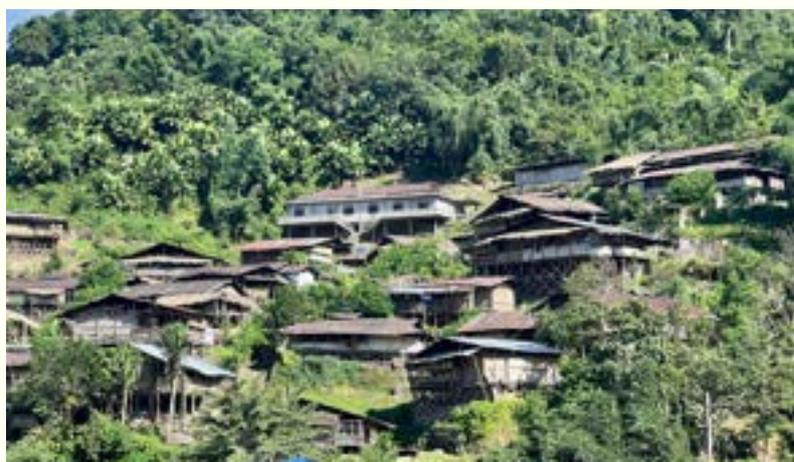
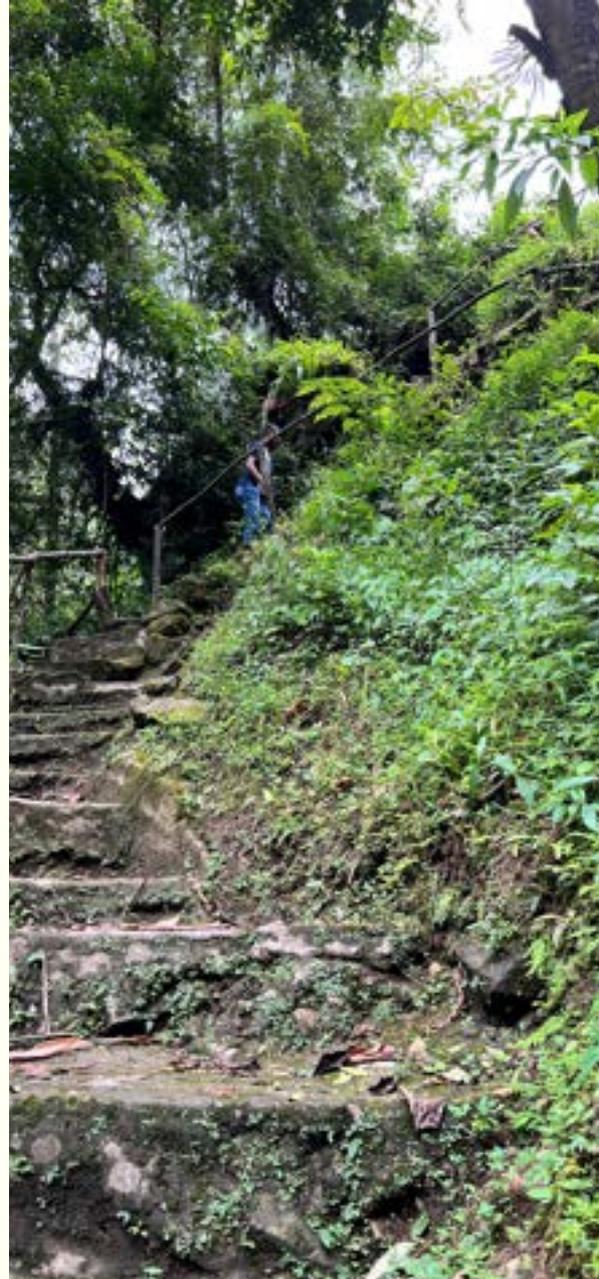
# FRAMEWORK FOR INCLUSIVE GROWTH

## UPPER SUBANSIRI

### **In partnership with NITI Aayog**

This study developed a sustainable tourism and economic development strategy for vibrant village clusters in Upper Subansiri.

The focus was on strengthening local livelihoods, preserving cultural heritage and enhancing the region's economic vibrancy by integrating tourism with Community Infrastructure development. The proposed approach balances short-term opportunities with long-term growth with a focus on creating a replicable model for rural and frontier region development of India.





## STRATEGIC PATHWAYS FOR FUTURE TOURISM

Through a detailed baseline assessment of local infrastructure, livelihoods and the regional economy, the study identifies strategic interventions to unlock Upper Subansiri's tourism potential.

These insights will guide the development of frontier villages into a cohesive and sustainable tourism circuit thereby enhancing their appeal as a future destination while ensuring growth that is locally led, inclusive and environmentally responsible.



# MAPPING THE SILK ROUTE

Ladakh was central to the trans-Himalayan Silk Route, connecting Central Asia with the Indian subcontinent via high-altitude passes. GHE's research has mapped this network of trade routes and cultural exchanges linking Kashgar and Yarkand to Leh and Kashmir.

It highlights Leh as a cosmopolitan trading hub where diverse merchants exchanged goods, religion, art, and ideas, shaping Ladakh's culture. Human stories and historic sites illustrate this network. Through mapping the Silk Route, GHE showcases its commitment to cultural research, heritage, responsible tourism and community development in the Himalayas.





## UNCOVERING THE LOST RUINS

Through field research and historical mapping, GHE has uncovered several forgotten structures along the trans-Himalayan Silk Route, including the Tulum Puti La trail, the Skeleton Route with its carved stone pathways, caravan serai ruins at Lophan Tso and the HOR cemetery for Yarkhandi traders.

These sites highlight the trade, migration, and cultural exchange that occurred in Ladakh's Silk Route. GHE's efforts in documenting these structures support heritage conservation, responsible tourism and community storytelling in the Himalayas.





## HOLISTIC EDUCATION

GHE's holistic education approach ensures that children in remote regions have access to safe, connected and engaging learning environments.

By integrating clean energy with digital tools and improved infrastructure, GHE supports schools and early learning centres to move beyond basic access toward quality education. Solar-powered classrooms enable uninterrupted learning, while upgraded Anganwadis create healthier, more stimulating spaces for early childhood development.



## DIGITAL EDUCATION ACCESS

By combining reliable solar electricity with computers, digital content and teacher training, these classrooms enable students to access quality education regardless of location. Interactive learning tools help improve engagement, digital literacy and academic outcomes, while ensuring uninterrupted teaching even in areas with unreliable grid power.

Smart classrooms connect rural students to a wider world of knowledge, opening pathways to future learning and opportunity.



## EARLY CHILD CARE SUPPORT

Through solar electrification, improved sanitation, child-friendly design, and learning materials, Anganwadis (ICDS) are transformed into healthier and more engaging environments for young children. These upgrades support better nutrition, early education and overall well-being during the most critical years of development.

By investing in Anganwadis, GHE helps build a strong foundation for lifelong learning, ensuring that even children in the most remote regions start their journey with care, safety and opportunity.





# RURAL TOURISM AND LIVELIHOOD

GHE's rural tourism model creates sustainable livelihoods by connecting remote communities to responsible, experience-based travel thereby ensuring tourism grows with communities, not around them.

By supporting locally run homestays, guiding services, and cultural and nature-based experiences, GHE enables families to earn steady incomes while preserving their landscapes and traditions. The model is designed to retain economic value within villages, strengthening local economies and supporting youth employment.

Clean energy access, training, and digital tools further equip hosts to run professional, climate-resilient enterprises. Together, these efforts make tourism a pathway for dignity, entrepreneurship and long-term rural prosperity.



# ECO HOMESTAY SETUP AND GROWTH

Rather than isolated properties, **Mountain Homestays** creates a unified ecosystem of village-run accommodations, each supported by common standards of hygiene, sustainability, guest experience and local ownership. Through structured training, infrastructure upgrades and clean energy integration, families are able to host responsibly while meeting consistent hospitality benchmarks.

By unlocking new locations and connecting them through a shared platform, GHE ensures that tourism growth is inclusive, high-quality and locally driven, allowing remote communities to participate in global travel markets without losing control over their culture, land or livelihoods.



# EXPERIENCE CURATION



## **SILK ROUTE DINING EXPERIENCE**

KYAGAR VILLAGE, LADAKH

Enjoy a cultural evening inspired by the historic Silk Route, where local cuisine, music and traditional dance come together. Hosted by village communities, this experience brings travellers closer to Ladakh's living heritage through food, storytelling and performance.

## **TRADITIONAL ART WORKSHOP**

DOMKHAR VILLAGE, LADAKH

Take part in traditional Thangka and mural painting sessions led by skilled village artists. Learn ancient techniques, work with natural pigments and explore the spiritual meaning behind each stroke through a hands-on experience rooted in heritage and creativity.



## **AMONG THE HERDERS**

CHUSHUL VILLAGE, LADAKH

Join Changpa herders in Ladakh's high pastures and experience their nomadic way of life. Walk alongside them as they graze Pashmina goats, learn about their deep connection to the land and witness a livelihood that has endured for generations in harmony with nature.

# HOMESTAY TRAININGS

GHE's homestay training programs prepare rural hosts to run confident, entrepreneur-led tourism enterprises that are both sustainable and guest-focused.

Through structured workshops, families are trained in hospitality standards, hygiene and safety, guest communication, digital tools and basic financial management. Equal emphasis is placed on shaping memorable guest experiences, from sharing local stories and cuisine to guiding cultural and nature-based interactions, ensuring visitors leave with a deeper connection to the place and its people.

By investing in people as much as infrastructure, GHE helps transform homestays into resilient small businesses that generate dignified incomes and build long-term economic confidence in remote communities.



# HOMESTAYS IN GARO REGION

GHE's homestay initiative in the Garo region of Meghalaya is shaping a thoughtful model of tourism in Northeast India. These are entrepreneur-led, family-run homestays that open up access to the region's extraordinary landscapes, including Nokrek National Park and the Siju Caves.

While independently operated, the experiences are deeply rooted in community life, giving travellers an authentic window into Garo culture, forests and traditions. GHE has trained the women who host guests, strengthening their hospitality and entrepreneurial skills and has ensured that the homestays are solar-powered with integrated clean energy solutions. The result is a model that creates dignified local incomes while offering visitors a truly immersive and eco-conscious stay.



# OUR PRESENCE



## YFS, Zug

GHE participated in the **Youth Forum Switzerland**, engaging with over 950 students from across Europe, the UK and the USA on climate action and leadership. The platform has also inspired several schools to join GHE on impact expeditions in the Himalayas.

Through a keynote and exchanges with young changemakers, GHE shared lessons from its work in remote Himalayan communities, showing how clean energy, community ownership and small actions can create meaningful change.



## ITB, Berlin

Astrostays, an initiative of GHE, was invited to ITB Berlin after winning the **Social Entrepreneurs in Tourism Competition** marking a proud moment for community-led innovation from the Himalayas.

On this global stage, GHE showcased how astro-tourism can turn remote villages into gateways to the cosmos, creating dignified livelihoods through dark-sky experiences, local training and cultural exchange proving that responsible travel can uplift communities while protecting heritage.

## VILLARS, Geneva

GHE was represented at the Global Learning Council and the **Villars Institute Symposium**, contributing to the global dialogue on inclusive and climate-resilient development.

During the gathering, GHE shared insights from its work across India's most remote regions, highlighting how community-led clean energy, climate-smart livelihoods and sustainable tourism can advance environmental stewardship while strengthening long-term economic resilience.

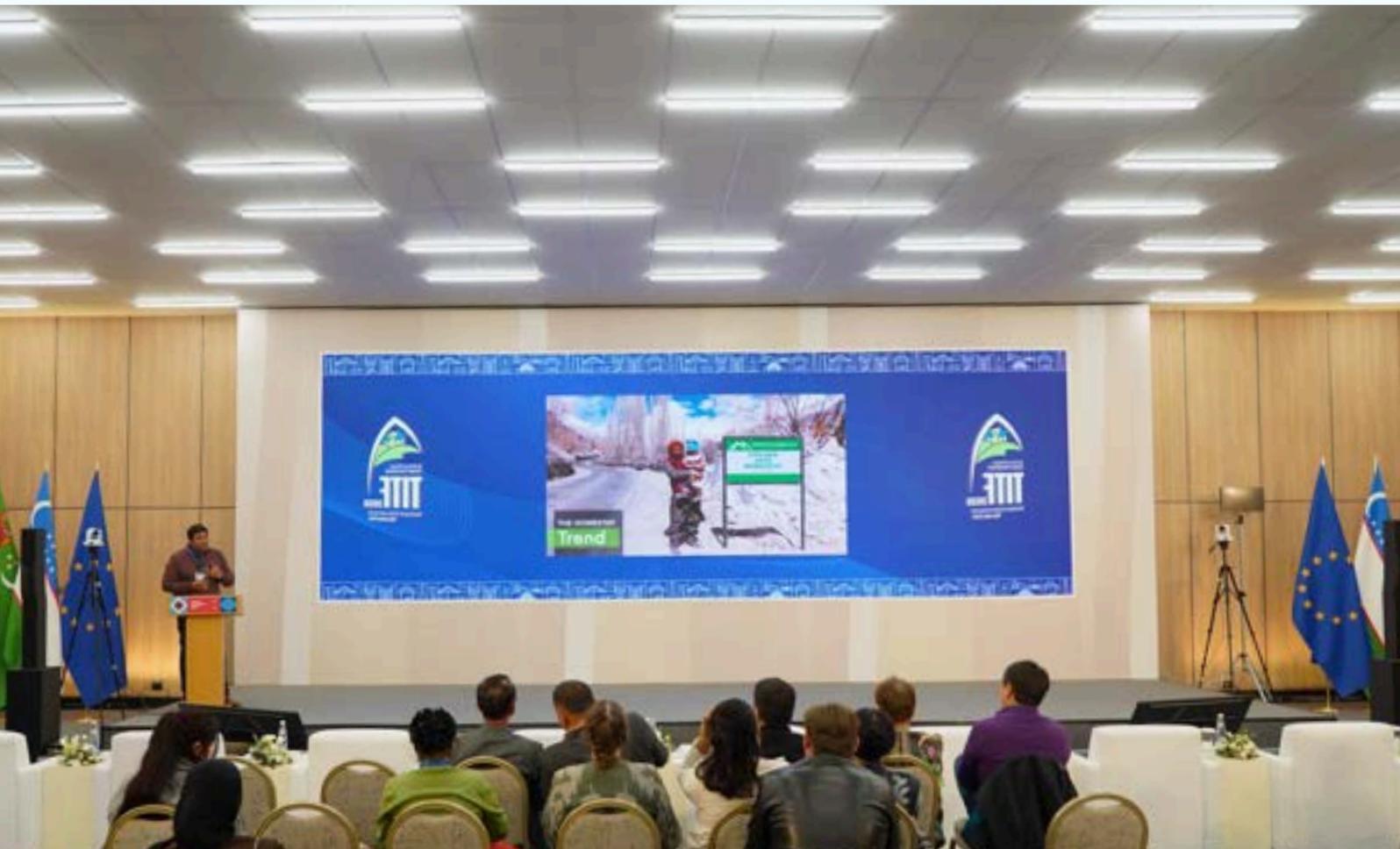




## CANAECO, Costa Rica

GHE was invited to deliver a keynote address at the **P3 CANAECO Summit and the Planeta Personas Paz Conference in Costa Rica**, contributing to the global dialogue on sustainable tourism and community-led development.

During the conference, GHE shared its experience in delivering clean energy, climate-neutral homestays, and livelihood programs across remote Himalayan communities. The engagement underscored how responsible tourism and decentralised energy can work together to create inclusive growth while protecting natural and cultural ecosystems.



## TASHKENT, Uzbekistan

GHE made its first inroads into Central Asia through its participation in the **Tashkent International Tourism Fair (TITF)** in Uzbekistan.

At the forum, GHE shared its experience in building community-based tourism value chains in mountain regions, highlighting how homestays and locally led experiences can strengthen rural livelihoods while promoting responsible travel.



# WHAT'S IN THE YEAR 2026



## Launching GHE Impact Expeditions in Central Asia (2026)

Starting in 2026, GHE plans to take its impact-led expedition model to Central Asia, building meaningful partnerships with remote communities and creating journeys that blend adventure with real, measurable social impact on the ground.

## Destination Development in Central India

Driving tourism infrastructure and community capacity development in Central India, with a focus on repurposing abandoned coal mining regions.



## Student-Led Impact Expeditions in the Himalayas

Strengthening student led, experiential impact journeys across the Himalayan region to enable the students with the tools to bring positive systemic changes

# WHAT'S IN THE YEAR 2026



## Scaling Clean Cooking Solutions

GHE will scale clean cooking solutions across underserved communities in India and Africa, reducing indoor air pollution, improving health, lowering emissions and supporting sustainable livelihoods.

## Expanding Inclusive Homestay Networks

Expanding GHE's homestay network across the Northeast and other parts of India entrepreneur led Eco Homestays rooted in nature, local culture while creating meaningful livelihood opportunities.



## Launching GHE Academy in 2026

In 2026, GHE plans to launch GHE Academy, bringing together its years of on-ground learning in community development and tourism entrepreneurship.

# PARTNERS IN IMPACT



