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Forward Together: A Culture-Nature Journey Towards More Effective Conservation in a Changing World

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**Healing the Broken Spine: A Community-led Conservation Initiative
in Garo Hills, Meghalaya, India**

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Abstract

Garo Hills, part of the Meghalaya elephant landscape in India, includes the Garo Hills Elephant Reserve and five elephant corridors, supporting about 800-1000 elephants. The Nokrek National Park along with a network of forest patches connecting to Balpakram National Park forms the backbone of biodiversity of the region and is designated as Garo Green Spine. In Garo Hills only 7-8% of the forested area is controlled by the Forest Department; the remaining area is owned by local communities under the jurisdiction of the Garo Hills Autonomous District Council (GHADC). Age-old agricultural practices like slash-and-burn cultivation (jhum) have fragmented the forests, affecting wildlife movement and increasing human-wildlife conflict, especially with elephants. Despite the dependence on such agricultural practices crucial for core sustenance, the Garo tribes take it upon themselves to stitch together this ‘spine’ through a community-led conservation initiative.

This paper proposes to capture the spirit behind the unique initiative by these communities along with Wildlife Trust of India and World Land Trust, which work in partnership with the GHADC in protecting community lands as ‘Village Reserve Forests’. This remarkable way of conservation has resulted in protection of over 2800 hectares of forest patches and habitat restoration of another 200 hectares. This is an affirmation of indigenous rights, self-government and community empowerment creating a multi-level impact resulting in not just wildlife habitat protection but also a positive social impact on the communities with regards to their livelihood and lifestyle. Such conservation measures can be a big step towards sustainable environmental protection in the long term.

Keywords

Wildlife Conservation, Forest Management, Garo Hills, Meghalaya, Garo Tribe, Village Reserve Forest, Community Based Conservation, GHADC, Wildlife Trust of India

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Healing the Broken Spine: A Community-led Conservation Initiative in Garo Hills, Meghalaya, India

Introduction

Northeast India, comprising of the states of Assam, Meghalaya, Manipur, Mizoram, Nagaland, Arunachal Pradesh, Tripura, and Sikkim is regarded as one of the 35 Biodiversity Hotspots in the world (Mittermeier, et al., 2005). It is designated as one of the important eco-regions i.e. Northeast India-Myanmar pine forests (Olson & Dinerstein, 1998) and has over 50% forest cover (State of Forest Report, 2017). These forests hold species like tiger (*Panthera tigris*), Asian elephant (*Elephas maximus*), Western Hoolock Gibbon (*Hoolock Hoolock*), Greater One-horned rhinoceros (*Rhinoceros unicornis*), Leopard (*Panthera pardus*), Clouded leopard (*Neofelis nebulosa*), Takin (*Budorcas taxicolor*), Golden Langur (*Trachypithecus geei*), Slow Loris (*Nycticebus bengalensis*) and Phayre's leaf monkey (*Trachypithecus phayeri*), which are on the IUCN Red List of Threatened Animals 2000 (IUCN 2002). Societies of this region are predominantly agrarian and their dependence on forests for sustenance and livelihoods is heavy. Being relatively under-developed compared to other regions of the country, opportunities for alternative livelihoods are limited. Peoples' dependence on forests and also on meat (Hilaluddin, Kaul, & Ghose, 2005) is taking a heavy toll on these natural resources and wildlife. This is apparently more so after a ban was imposed on the felling of trees by the Supreme Court of India in 1996, further curtailing opportunities to earn livelihoods.

In spite of rich forest and mineral resources, Meghalaya in North-East India faces key environmental concerns for a host of reasons, which include deforestation, fragmentation of forests, soil degradation, biodiversity loss, and contamination and silting of water bodies. During the past few decades, there has been considerable deterioration in the quality of the environment in Meghalaya, and with a forest cover of 17,146 sq km 76.45% of its geographical area (FSI, 2017), Meghalaya's forests are highly threatened because of deforestation and fragmentation, especially in Garo Hills.

The Garo Hills of Meghalaya are part of the Indo-Burma Biodiversity Hotspot, unfortunately among the most threatened of the Earth's biodiversity hotspots because of rising anthropogenic pressure. Six of the biodiversity priority regions identified by the Ministry of Environment, Forest and Climate Change, are located in Garo Hills, out of the 16 regions recognized in Meghalaya. Age-old agricultural practices like slash-and-burn cultivation have fragmented the forests, hindering wildlife movement. As per the Global Forest Change Data 2015, the Garo Hills alone have lost 94,195 hectares of forests having greater than 30% canopy density during the period 2001-2015 as compared to the baseline of 709,497 hectares in 2000.

Meghalaya also has a distinctive system for management of forests, wherein the local communities manage large areas of forests. This unique system of forest management is more prevalent in the states under Schedule VI of the Constitution, i.e. Tribal areas of Assam, Meghalaya, Mizoram, and the other Northeastern States. By virtue of this system, the lands other than Government Reserved Forests and Protected Areas are managed by indigenous locals, communities or individuals. The forested areas are protected by village councils who make and enforce communal laws, often in accordance with the National Laws of Wildlife Protection (Wildlife Protection Act 1972). The District Councils are constitutional bodies with a large degree of functional autonomy, and have their own administrative apparatus for the management of forests. For example the state of Meghalaya, has an estimated forest area of 15,657 sq km (43 % of geographical area), of which only 1027.20 sq km (6.56%) is under the control of the State Forest Department (Forest and Environmental Department). The remaining forest areas are under the direct/indirect control of Khasi, Jaintia and Garo Hills Autonomous District Councils or private ownership (14629.8 sq km, 93.44%).

Although these district councils have laws to manage the forests, there appears to be no mechanism in their mandate for the protection of wildlife (Kaul, Tiwari, Kyarong, Dutta, & Menon, 2010). The nature of forest management in this landscape is quite different from the rest of the country, and involves people down to the village levels in determining the land use. However, the status of wildlife conservation as a subject matter within the district councils

appears vague and without any mention. The state is undertaking wildlife protection within the National Parks, Wildlife Sanctuaries and Reserve Forests under their custody, but who protects forests within the jurisdiction of the district council? Further, do the present laws and also the resources at their disposal allow the district councils to take the steps necessary for initiating and achieving wildlife conservation, and if they do, do the district councils and the community have the capacity and the infrastructure to undertake all of this? These are some of the questions that need answers.

In Garo Hills, the cordial relation and faith of the people in both the State Forest Department and the District Council have been translated into meaningful conservation initiatives. Wildlife Trust of India (WTI) and World Land Trust (WLT), in partnership with the local governments, Garo Hills Autonomous District Council (GHADC) and the Meghalaya State Forest Department have been working with the local communities for over a decade and a half to restore the forest patches located between West Garo Hills and Nokrek National Park, with a view to establishing wilderness connectivity with Balphakram National Park (BNP). The Nokrek National Park, along with the network of forest patches connecting to Balphakram National Park, forms the backbone of biodiversity of the region and thus is designated as ‘Garo Green Spine (GGS)’. The overall aim has been to link the islands of forest separated by *jhummed* land (land that has been treated to slash-and-burn cultivation) by getting them protected as Village Reserve Forests (VRF) and then restoring the natural forest through afforestation, not only to provide safe and unhindered passage for wildlife movement but also for maintaining a healthy ecosystem in the area. Declaration of VRF brings the forest area under legal purview as well as under customary tribal norms which restricts the locals from disturbing the ecosystem. The impact of the customary norm is serious and effective.

The Wildlife Trust of India, in collaboration with the Meghalaya State Forest Department, has identified and documented six elephant corridors in the state (Menon, et al., 2017). Because of the need to work with the community and local Government to protect the larger habitat and corridors, to minimize human-elephant conflict and to ensure long-term conservation of the

elephants in Garo Hills, it was thought prudent to link the fragmented patches of habitats. As a result of WTI and WLT's efforts over the last decade, two important elephant corridors in the region have already been secured - the Siju-Rewak Corridor and the Rewak-Emangre corridor - along with over 2800 hectares of forest land known as Village Reserve Forest.

Methodology

The methodology follows the 'Community Securement Model' of WTI for securing elephant corridors wherein community-owned lands are set aside as Village Reserve Forests through easements or bilateral benefit-sharing models. This has been a very innovative approach for conservation where the community has owned the conservation efforts and more importantly where both the community and Government have come forward for securing the safe passage for wildlife movement. Conservation initiatives include:

1. VRF declaration for securing elephants' corridors and critical wildlife habitats,
2. Habitat restoration,
3. Optimizing social benefits by strengthening livelihoods, and
4. Human-Elephant Coexistence Strengthening measures.

The strategy took the conservation initiatives forward and brought in more area under conservation by legally designating larger lands for wildlife conservation, restoration of *jhummed* fallow lands, sensitizing people on the need of wildlife conservation and its benefits through campaigns, optimizing social and biodiversity benefits by strengthening livelihood and employment opportunities of the people, reducing dependency on forest, minimizing slash and burn cultivation, use of fuel-efficient stoves on pilot basis to reduce fuelwood extraction and sharing the experience, learnings and success models with the public through workshops/ meetings.

The activities were planned to target two main areas - Project Area and Project Zone. Project Area consisted of the main conserved areas (Garo Green Spine area) including areas that have

potential to be conserved by declaration as VRFs, whereas the villages and their areas to be covered under livelihood and community welfare activities were part of Project Zone. Other than this, the plan further involved addressing a new and wider range of aspects including recognising a key VRF in the Garo hills as a ‘Citrus gene pool’, development and intensification of horticultural activities in the area, supporting the preservation of traditional Garo culture, leveraging meaningful participation of women in all phases of the project and also ensuring compliance with CCBA guidelines including women’s empowerment.

The creation of Village Reserve Forest was based on the following:

- ❖ Community participatory discussion,
- ❖ Resolutions from villages on incentive schemes for designation of an area for VRF,
- ❖ Micro-planning for green livelihood alternatives,
- ❖ Implementation of the green livelihood alternatives eg. poultry scheme, the creation of terrace farming etc. based on microplans,
- ❖ Registration of VRF in District council,
- ❖ Creation of VRF committees for management and protection of the VRF,
- ❖ Monitoring of VRFs and secured elephant corridors,
 - Survey of earlier identified corridor areas,
 - Regular monitoring for corridor use by elephants and other species by line transects and assessing dung encounter rate.

Discussion

The total population of Meghalaya as per Census 2011 is 2,966,889, an increase of 27.95% from 2001. The details of Garo Hills districts (Census 2011) are indicated in the table below.

District	Population	Increase	Sex Ratio	Literacy	Density
West Garo Hills	643,291	24.09 %	984	67.58 %	175
East Garo Hills	317,917	26.87 %	972	73.95 %	122
South Garo Hills	142,334	40.95 %	945	71.72 %	75

The Garo Hills districts are dominated by the Garo tribe (*A'chik*), while other tribes like Hajong and Rabha are also found in small numbers in isolated pockets, in areas bordering Assam. The matriarchal law of inheritance, by which custody to property and succession of family position run through the female line passing from the mother to the youngest daughter, is a common cultural tradition of Garo tribes. Christianity, Animism (the worship of nature deities and other spirits), Hinduism and Islam are the main religions. Traditional customs are maintained, and religious festivals include varied forms of dance and are an important element in the local culture. *Wangala* is the prominent festival of the Garos and is dedicated to the Sun God. The area is rich in tribal culture and folklore. Drinking and dancing to the accompaniment of traditional music featuring bamboo flutes, and drums are an integral part of religious ceremonies and social functions. The advent of Christianity in the mid-19th century, along with its strict morality, has somewhat weakened many of the tribal institutions.

The Garo Group is a part of the greater Bodo-Kachari family both by ethnic group and language. Their present location has enabled them to maintain many of their traits and characteristics. Significant changes came only after the British colonization of the area in the first half of the nineteenth century. However, the inhabitants of the frontier regions displayed significant influences of the East Bengal Province and Assam.

The traditional tribal forest management system and conservation involved setting aside Sacred Groves. The sacred groves are a unique feature in Meghalaya which hold religious importance. They are known as Law Lyngdoh, Law Niam and Law kyntang, depending on the location. According to C.P.R. Environmental Education Centre, hosted by the Ministry of Environment and Forests & Climate Change, 105 sacred groves have been documented in the state, eight in East Garo Hills, and eight in West Garo Hills. Ancestral worship is traditionally performed in the sacred groves, with the focus on ancient monolithic stones erected in memory of the departed elders (Barik, 2006). These sacred groves are scattered at different places and generally found below the hill brows. These forests are a relic of the original forests and are a storehouse of a variety of plant genetic resources.

The sacred groves, however, are also getting destroyed and mismanaged, similar to the private/community forests, but for a different reason, i.e. 'loss of sanctity', as Christianity does not subscribe to such beliefs. As a result, many of the sacred groves are neglected or degraded. Studies show that only 1% of the total area of sacred groves is undisturbed (Kaul, Tiwari, Kyarong, Dutta, and Menon, 2010) and the surrounding area are subjected to various degrees of disturbance either by the felling of trees, *jhumming*, cultivation, extraction of resources or other land uses. Despite such a bleak scenario, the sacred groves are among the last treasure houses of biodiversity in the region. They most often represent the relict vegetation of a region. There can be no debate on the subject of their ecological importance. What can be debated, however, are the strategies that need to be undertaken to conserve the unique institution of sacred groves, such as including them in the protected area network or recognizing their importance using the VRF model.

Use of old cultivation practices in the form of *Jhum* is also a concern. Due to limited employment opportunities, a majority of the Garo population depends on agriculture for sustenance and *jhumming* is the main agricultural practice of the inhabitants with 32.3% of the rural population dependent on shifting agriculture in East Garo Hills and 19.77% and 43.66% in the West and South Garo Hills respectively. Reduction in the *jhumming* cycle (shortening fallow periods) has caused immense fragmentation of landscapes in these once densely forested lands (Marcot, Kuman, Roy and Sawarkar, 2002). The preeminent threat to native forest biodiversity is the increasing anthropogenic conversion of mature and primary forests to *jhum* land, which can severely affect viable habitat connectivity of key species like the endangered Asian elephant and Hoolock Gibbon. In the past, the *Jhumming* cycle was about 20 years, but it has now been reduced to 3-5 years in the western part and 1-3 years in the central and eastern parts of Meghalaya (Kaul, Tiwari, Kyarong, Dutta, and Menon, 2010). *Jhumming* has resulted in large-scale deforestation, soil erosion, nutrient loss and invasion of weeds and other species. These activities have ultimately affected biodiversity to a large extent. Therefore, it is both a need and priority to conserve the rich flora and fauna of the Garo Hills by connecting the wilderness between Nokrek

National Park and Balpakram National Park, thus keeping both culture and conservation side by side.

Results

As a result of WTI's efforts over the last decade, two important elephant corridors in the region have already been secured – the Siju-Rewak Corridor and the Rewak-Emangre Corridor. The communities have so far voluntarily set aside over 2822.3 hectares of land for conservation and these patches have been notified by GHADC as 17 Village Reserve Forests.

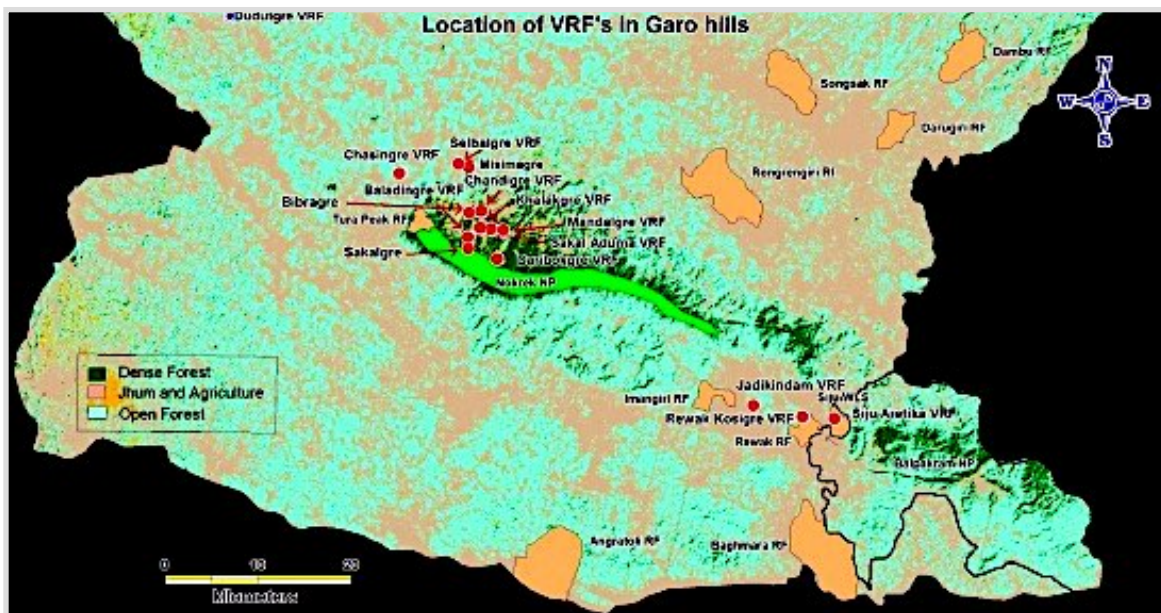


Figure 1. Map of the Garo Green Spine with the location of declared VRFs

On the West of Nokrek National Park, WTI has worked with WLT and IUCN-Netherlands to secure the community forests between Nokrek and Selbalgre through habitat restoration and community assistance. The team initiated the habitat restoration work to bring up the quality of the VRFs in 2009-10 in 3 VRFs and there has been a continual increase in the number of plants every year, with more plants surviving from the previous year, and new recruits through Assisted Natural Regeneration (ANR). The total number of indigenous standing trees maintained (including plantation) as per the 2015 annual plantation count is 145,026, covering 105 hectares

of area. This has been in full swing toward achieving the predetermined overall impact of securing 4500 hectares of Canopies, Corridors, and Catchments of Garo Green Spine by 2025 for enhancing the survival prospects of elephants, gibbons, chocolate *mahseer* and other key wildlife indicators. Thus, in collaboration with the Garo Hills Autonomous District Council, State Forest Department, local people, Nokmas² and other NGOs working in Garo Hills, Wildlife Trust of India is making continuous efforts to restore the landscape between Nokrek (including fringe areas) and Balpakram to afford a better habitat for wildlife and help reduce human-wildlife conflict.

This community-based conservation model is unique as an amalgamation of tradition, cultural and environmental conservation, initiated by GHADC and further applied successfully with the support from Wildlife Trust of India. Further, plans are to replicate this model to increase conserved areas in Garo Green Spine through declaration, protection, management, and monitoring of the notified VRFs with the community. Through targeted sensitization identifying and addressing the need for the community, the community has taken ownership of the conservation efforts, and together with local government, has come forward to secure safe passage for wildlife. The approach has earned the confidence of people and had an optimistic influence in bringing community conservation to a whole new dimension, bringing ecological justice, countering anthropogenic pressure and creating a win-win situation for both wildlife and humans. The model has flourished, bringing sustainability in conservation to a point where all the activities are by the people, to the people and for the wildlife.

However, ensuring communities receive equitable benefit, which is greater than the cost of the land they have set aside for conservation, is of utmost importance. The approach has specifically taken this into consideration and provided support to the villagers who have set aside land for conservation in order to strengthen their livelihood and create employment opportunities in various forms, such as organizing free health camps in remote areas, providing fresh drinking water facilities, educational support, skill development trainings and support on sustainable

² Head of the Village, Chieftan.

agriculture, tourism, animal husbandry, pisciculture, horticulture, etc., benefitting around 7,000 individuals from 25 different villages.

Challenges

Working with the village community on the conservation of forests and wildlife, whose members are always on a lookout to prevent loss of property and life due to human-wildlife conflict, remains a challenge, as does a conservation approach that requires setting aside their owned land, which is their biggest high-value asset. We encountered these issues almost each and every time we initiated the process for the creation of VRF. The strategy adopted to overcome this was targeted sensitization on the importance of wildlife and strengthening human-animal coexistence.

Conclusion

The conservation of wildlife and its habitat in a country like India is challenging, owing to the country's high human population density and its increasing distribution. It is therefore critical to establish a sustainable conservation model that strengthens human and wildlife coexistence in terms of reducing human dependency on forests (wildlife habitats), mitigating human-wildlife conflict, management of forests, supporting locals' traditions and culture, and encouraging them to be at the frontier of conservation to reduce negative impacts of human-wildlife interactions. The community-based conservation model adapted by WTI embraces the local traditional cultural practices combined with wildlife conservational outcomes by involving the local communities, administrations and appellate authorities. Through this approach the locals have given their support and have set aside more than 2800 hectares of their community lands as 'Village Reserve Forest' to conserve the Garo Green Spine. The WTI has, in return, supported them by enhancing their livelihoods, health, education and other necessitates, creating a win-win situation for both human and wildlife. The sustainability of this approach is achieved by facilitating management involving the locals, administration and appellate authorities, which can achieve an amalgamation of culture and conservation even after WTI's facilitation ends.

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