

Grassroots OPTIONS

NORTH-EAST INDIA's First Magazine on People, Environment & Development

SPECIAL ISSUE, 2023



Jhum Culture
It's A Different
WORLD

NITI Aayog Report on *JHUM* : "It's a Dead Document Now"



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'deSchooling' the perspective on *Jhum*

About three years ago, I was invited to a freewheeling conversation on India's 'northeast' - a frontier region, rich in minerals, forest, wildlife, and biodiversity; it's also home to hundreds of tribal communities, each having its own distinct identity, culture, language, farming system, and oral tradition. Perhaps, it's because of such pluricultural attributes, one finds the region so exotic, mysterious and often incomprehensible!

The dialogue process, fashioned as 'Northeast Workspace', was mooted by the New Delhi-based Heinrich Boll Stiftung, a German Green think tank, which brought together a motley group of individuals of different disciplines and persuasions -journalists, writers, cultural activists, artists and academics - mostly from the northeast and a few others, who had some fascination for this diverse bio-cultural region.

It afforded us a rare opportunity to travel, meet and then talk, exchange our views and ideas, and reflect together on how to address the myriad of issues and concerns people are grappling with. And, in the wider context, how do we respond to the looming climate crisis and the impact of human economy on the natural world? Moreover, one cannot lose sight of the growing disillusion-

ment among people across the world with the so-called modern developmental model and hedonistic lifestyle, perpetuating a culture of pervasive consumerism.

After a series of meetings and confabulations at different locations - Kaziranga, Guwahati, Majuli, Manas, and Haflong- we coalesced into the next phase, what we called the 'deSchool process'. It's like viewing the 'Northeast' and the world through a different lens or an alternative perspective, rather than using only the techno-scientific approaches, promoted by modern institutional thinking and learning processes, mostly aping the Western models.

Northeast offers a bouquet of ecological knowledge, ideas, insti-

tutions, and practices developed and nurtured by numerous traditional communities for centuries. They have adopted a lifestyle and livelihood that is sustainable within the limits of the ecological resources available to them. They live almost independent of the modern economic system. How could such communities manage to sustain their lives and thrive for generations, amidst the monetized economy? What are the community concepts of life, living and the natural world surrounding them?

So, we thought of exploring some of these ideas by immersing ourselves into the community life in a village, interact with the families, listen to their stories, their way of learning and



knowing, and most importantly, their philosophy of life that keeps them going and staying hopeful. We decided we would visit some of the villages in the Dima Hasao District, inhabited mostly by the Dimasa indigenous community along with other tribal groups.

Like most of the upland communities in the region, the Dimasas mostly depend on *jhum* or shifting cultivation, an ancient indigenous food growing system on hill slopes. However, while there are *jhum* areas which have been co-opted into the market systems, there are some which still operate largely independent of the market forces. *Jhum* system works on the principles of commons, self-governance, shared labor and ancestral knowledge, subsistence economy, and a food production system, which protects and nurtures its own seeds and sowing methods transmitted as oral knowledge from one generation to the other throughout the centuries. These communities have continued to live and survive according to their own governance systems, healing practices and their way of communicating with any other non-human worlds out there through their distinctive belief systems.

It was decided that we form smaller groups from among the large 'deSchool practitioners' and chose one among the five shortlisted Dimasa villages, which have consented to host them. Each group will spend a few days in its identified village and write about one's experience or express views or ideas in any form of their choice.

I opted for Purana Hajong, an old Dimasa village. I made a

couple of visits during 2021-22 and thought this village was special. It had all the features of a deSchool paradigm, and so, I along with two other colleagues decided to camp there. Each visit consisted of three-four days, during which we walked with the villagers to their *jhum* fields, learnt about their farming practices, crops and vegetables they grow etc. On their return from the field in the evening, and once they are done with chores, we visited a few households and chat about the village life. Later,

Jhum system works on the principles of commons, self-governance, shared labor and ancestral knowledge, subsistence economy, and a food production system, which protects and nurtures its own seeds and sowing methods transmitted as oral knowledge from one generation to the other throughout the centuries



as the DeSchool progressed and members were asked how they would like to share their experience, I proposed '*jhum*' as a 'life style and livelihood model' and the Purana Hajong village as a 'site of exploration' within the evolving 'deSchool process', write a comprehensive essay, and then publish a special issue on the theme in the *Grassroots Options* magazine.

In addition to this, we have also invited a group of writers, researchers and activists, including *jhumias* from other northeastern states - in Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Tripura, where *jhum* is widely practiced in the upland areas - to report on the changing *jhum* landscape in their respective states. The issue also has a review of the official policy on *jhum* as well as the institutional perspective on the future of this ancient farming practice.

What if this indigenous upland farming system eventually dies, as it appears to be so? Is there any irreparable loss that humanity may suffer once the *jhum* system is wiped out for good? The truth is that the *jhum* landscapes are the repository of original gene pools of bio-diversity, which is conserved and maintained through indigenous food production practices and by ingenious management of the fallow forests in the hills.

Therefore, once the *jhum* practitioners are 'weaned' away into industrial agriculture, the natural gene pools of bio-diversity nurtured by their guardians will be lost forever. Life will fall silent in the mountains. And if life is silenced in the hills, the plains will not last for long. ■



GHADC-WWC Initiative: REDD+Project in Meghalaya

Conserve forest, Get paid

In Meghalaya, most of the land and its resources – water, minerals, and forest – belong to the indigenous tribal communities. The state forest department controls barely five percent of the total forest areas, which include only reserve forests, protected forests, national parks, and wildlife sanctuaries. And yet, the importance and role of the community are generally undermined in matters of forest management and governance. Therefore, the forest department has not been quite successful in forging real partnerships with the communities, while the latter has often been criticized for deforestation and land degradation because of their ‘poor land use practices’. Who is the ‘real custodian’ of forests?

Many would agree that much before institutional forest management was introduced in the country and forest resources were monetized, various tribal and indigenous communities managed, conserved, and maintained forest areas, and categorized them according to their perceived values or functions, such as sacred groves, village and community forests. The upland tribal communities in Meghalaya – the Khasis, the Pnars, and the Garos – have adopted ingenious ways of managing their forestlands or ‘forest commons’ to grow food on the hill slopes by rotating farm plots and regenerated forest fallows, which is ubiquitously known as *jhum*. Besides, they also would set aside some patches of rich natural forest in the village to

maintain the water sources, or, restrict access to certain forest areas, which they consider the domain of forest spirit. However, the national and state forest laws do not recognize this type of community-managed forests and simply treat these as ‘unclassified forests’.

The autonomous district councils, named after the Khasi, Jaintia, and Garo Hills and constituted under the Sixth Schedule of the Indian Constitution, administer the respective tribal territories, including most of the community-held forest lands. But these governance institutions, too, are guided by the central and state forest laws; the state forest department and the ADCs work in silos and maintain just a functional relationship.

Moreover, the ADCs are underfunded and generally dependent on the timely disbursement of revenue, shared between them and the state. At times, the ADCs cannot even pay their employees for several months, and in the case of the Garo Hills Autonomous Council (GHADC), salaries and wages are due to them for more than 30 months.

Under these tenuous conditions, forestry activities have suffered a lot in the state. At the same time, communities also failed to develop sustainable forestry-based enterprises or create viable income from forestry works because of numerous regulations and bureaucratic hassles. For the ADCs, forests and non-timber forest produce are the principal sources of revenue, besides land revenue, markets, and trade licenses. In matters of land and forest, local communities are generally wary of any partnership with either the state department or the ADCs, which, they fear, may

lead to loss of ownership and control over the resources.

“We understand the community concerns and are trying our best to work with them, helping them initiate, design, manage, and implement their plans,” said Mr. Rangku N Sangma, the chief forest officer of the GHADC. Besides playing a critical role in mitigating climate risks, he believes that forestry is one single sector that can create a sustainable rural economy and secure livelihood and better income for the communities. Ironically, the council does not have enough resources to initiate any major project on its own.

In the past few years, the GHADC has been working on developing a community-led forestry project in the Garo Hills in collaboration with a US-based conservation company, Wildlife Works Carbon (WWC). It is already supporting a number of community-centered projects that integrate wildlife and biodiversity conservation with the livelihood needs of the local communities in Africa and Southeast Asian countries.

“We are attempting a similar project in the Garo hills based on the REDD+ framework and the international guiding principles for working with the indigenous communities in their territories,” Mr. Sangma said. Though the project is still in its formative stage, in the past one year a series of meetings and workshops with the Nokmas, the traditional custodian of the ancient clan lands, known as *A-kings* (Garo villages), *Chras* (clan members), and village elders have been done across the Garo hills to explain the objectives, concepts of and approaches to the proposed project and the nature of the partnership with the communities.

“Securing ‘Free, Prior, and Informed Consent (FPIC)’ of the

participating communities is the first step and a mandatory principle before initiating any project,” opined Stephan Bognar, Director of Sustainability Asia, who is guiding the process of project formulation along with the communities and the GHADC. The villages, which wish to participate in the project, will be required to sign an agreement with the WWC, stating the size of the forest they are willing to bring under the project. But the key criterion for selection of a forest is that it must be at least 10 years old and should cover an area of a minimum of one hectare, he added.

On the basis of information provided by the community, each proposed forest area would be surveyed, mapped, and geo-referenced in order to assess the biomass value of each forest site and monitor and review the overall project activities.

An international auditor’s team, hired by WWC, would visit each forest site to measure the biomass and the carbon credit value on the basis of which the community will be paid by the company every year for a period of 30 years or more. The beauty of the project is that communities are free from indemnity if they choose to leave the project for nonfulfillment of any clause by the WWC. The WWC has already invested a lot of time and resources to train the rangers and forest field staff in the scientific management of community forests and wildlife, including the application of modern tools and technologies. “A lot of

forestry is one single sector that can create a sustainable rural economy and secure livelihood and better income for the communities

Forest and black pepper plantation at Emangre in the Garo hills, Meghalaya



groundwork has yet to be covered before the project is formally launched,” the CFO, Mr. Sangma said. However, “we are hoping to roll it out by December this year,” he told *Grassroots Options*. ■

‘Tigers are our Brothers’

Why do Idu Mishmis oppose Tiger Reserve in Dibang Valley?

Development and Conservation at times are tricky - as much as they are complex - issues. There are always some inbuilt tensions between these two human endeavours, as these pit people and nature against each other. Differences also exist within each of these concepts among the respective stakeholders. Questions crop up: What is ‘development’ and ‘conservation’? What should be conserved and why? Who should be involved in conservation, decision-making, planning, and execution of works? Who benefits from all this?

Usually, these issues are left to the State and official agencies, such as the forest department, research institutes and organizations, domain experts, scientists, and nature conservationists, who are considered the key stakeholders.

In most parts of India’s northeast region, however, the issues of development and conservation often meet with serious challenges from ‘invisible stakeholders’ – the indigenous communities of the region. Government development initiatives, particularly dams and infrastructure building, as well as forest, wildlife, and biodiversity conservation projects, face stiff resistance from local communities as they perceive these as threats to their self-governing systems.

A case in point is the current controversy over the government proposal of notifying certain areas, including the Dibang Valley Wildlife Sanctuary in northeastern Arunachal Pradesh as the Tiger Reserve. The Dibang valley, spanning across about 13,000 km²,

comprising Dibang and Lower Dibang valley districts, is largely inhabited by the Idu Mishmi tribes. They are also found in the northern hills of the neighbouring Lohit district.

The highlanders of the community grow rice, millet, sorghum, job’s tears, mix of fruits and vegetables as well as wild edible leaves, plants, roots, etc in their jhum fields. Though hunting of animals and foraging forest are an integral part of their socio-cultural life, the community maintains strict ethical codes in matters of hunting certain animals, particularly tigers. Tigers are regarded by the community as their brothers and are well protected by the local people, even though tigers often kill and take away their livestock.

killing a tiger is considered similar to homicide, and an array of rites and rituals (ghena and iyu-ena respectively) is followed to atone for the sin. If a tiger dies, then the ‘tiger-brother’ is buried with ceremonies similar to that of a member of the Idu Mishmi community

Deep Gogoi, a wildlife biologist, who has lived amidst the Idu Mishmis, said they believed that tigers and Idu Mishmis were born of a same mother. And therefore, “killing a tiger is considered similar to homicide, and an array of rites and rituals (*ghena* and *iyu-ena* respectively) is followed to atone for the sin. If a tiger dies, then the ‘tiger-brother’ is buried with ceremonies similar to that of a member of the Idu Mishmi community,” he said. About a decade ago, when an expert team visited some community forest areas, the members were surprised by the presence of several tigers in forest areas around the Idu Mishmi settlements.

So, on the basis of the report of the expert team when the state government decided to notify those community conserved areas as Tiger reserve, the Idu Mishmis vehemently opposed the proposal. Why does the government need to set up a tiger reserve in the Mishmi lands, “when it is conserved naturally through our beliefs and cultural practices, which strongly forbids the hunting of tigers?” Leaders of the Idu Mishmi Cultural and Literacy Society (IMCLS) asked. “Several cultural taboos (of the community) have their role in the conservation of wildlife. This is the reason why many tigers in Idu Mishmi community have co-existed in a harmonious and cohesive way since time immemorial,” they stated in a press note, issued in April 2023.

They urged the authorities to reexamine the whole issue and refrain from taking such steps that may cause harm to the lives and livelihoods of the local communities. The IMCLS demanded in a statement, that the authorities “work toward finding a solution that benefits everyone and respects the rights of the indigenous people.” ■

Sipini may not be one of those influential villages of the Nocte community, namely Borduria or Namsang in the Tirap district of south-eastern Arunachal Pradesh, but it is founded on the shared history of struggle and strife among the warring sub-tribes and clans of the tribe. After years of travails and search for suitable land, the Khamthins under the leadership of Nanba Khamthin Lowang secured a land for the Khapas, which is now known as Sipini. It's a land that lies between two streams – the Namchuchang and Chatjo. It is located about 10 km from Deomali, the sub-divisional headquarters and the educational hub of the district.

“I can't say exactly in which year the village was set up, may be in the late 80s,” said Mr. Thangjo Khamthin, a village elder and a member of the Gaon Panchyat (GP), the elected village institution for local governance. However, all the village affairs are helmed by the traditional chief, according to customary rules and practices of the Nocte Community.

When the village was set up, there were not many Khapa households, so the new chief invited some more families from the Kheti village to settle down at Sipini, also earlier known as 'Lindat' which means 'nurturing a forest'. Presently, a total of 68 families are living in the village, and all of them subsist on indigenous farming or *jhum*, along with animal husbandry. The households are sparsely located amidst patches of forest, composed of bamboo and mixed vegetation. “We meet our basic requirements of life from the forest – mainly food and house-building materials,” he claimed. Every household maintains a grove of Toku plants that are used for roofing. Most of the houses are built on a raised platform and made of

Sipini – A Nocte village, millet & elephant raids



A *jhum* farmer's field at Sipini village, Tirap, in Arunachal Pradesh

bamboo (for walls and flooring), tree poles, and timber. Millet, rice, and maize are the principal staple cereals, which are grown along with a variety of vegetables in a single *jhum* plot. Every family, especially those in their 50s and above, follows the indigenous method of food production, which they have learned from their parents and grandparents.

When asked what if the government wanted to stop *jhum*, as they say, it destroys forests and causes soil loss, Mr. Thangjo said: “Let them try to do whatever they want, we will have to do *jhum* to stay alive! That's what our ancestors did, what we learned, and this is the only thing we know.” Of course, he was not quite sure whether or not his

children and the younger generation would continue this farming practice. Perhaps not, as they are exposed to modern education, social media, and smartphones. “When we were young, we didn't have proper education because of lack of resources and opportunities,” he opined. Those who have some education, have left the village for better life in towns. But he is happy that one of the sons of the founding chief of the village, who studied at the university, has embraced the village life and offered to be a helping hand to the village.

“I'm tired of noisy, stressful city life,” Japon Lowang, who has been working as a journalist for several years at Itanagar, the capital city of

Arunachal Pradesh, confessed. “Life is quite peaceful here, and there are a lot of resources lying in the village,” he said. He is constructing a house for himself and later, plans to add a few rooms, which can be used as a ‘real homestay’ for tourists, visitors, or friends. But for making the village suitable for eco-tourism, “we have to make sure that we protect and conserve our forest and biodiversity as well as the traditional architecture of the expansive Nocte house,” he opined.

One of the problems the village faces is elephant depredation of *jhum* crops, which exposes the tuskers to the villagers’ wrath. “We have to educate our youth about the real meaning of eco-tourism, that is, conservation of nature (water, forest, wildlife, and biodiversity) for securing our livelihood, and also create awareness among village population of cleanliness and hygiene.” It’s easier said than done, he admits, but that’s one humble way of contributing to the prosperity of Sipini, founded by his father. ■

concentrate’ - to earn her MSc in 1959. On returning home, she joined back in the Department of Agriculture. After coming to Shillong, then the capital of undivided Assam (now the capital of Meghalaya) Ms. Gohain started working on the preservation of locally available fruits – mandarin oranges, plums, pears, and peaches, which were growing in abundance at the Fruit Gardens at the agricultural premises and all over Shillong.

Subsequently, she set up a Fruit Processing factory, the first of its kind in the northeastern region, to make better use and provide economic value to the fruits produced by the local farmers of the region. Not only that, she found a perfect opportunity to put her knowledge into practice by processing fresh fruits and turning them into various products, juice, jelly, jam, and canned fruit slices. As further evidence of her dynamism and of being a social entrepreneur, these products were

Annada Gohain with her staff on a private visit in Shillong in front of the agriculture office at fruit gardens

Forgotten at home, Remembered Abroad!

Annada Gohain – who pioneered fruit processing in Meghalaya

In August this year, the University of New South Wales (UNSW) Sydney, Australia, honoured one of its outstanding students by dedicating a hall – ‘Go6, Annada Gohain Theatre’ after her name. Recently, the university launched a special project – ‘Celebrating UNSW Women’ - to reconnect with, what it stated on its university website, the “earliest cohorts – some of our first women graduates, pioneers who paved the way so others could follow,” to acknowledge their contribution, and provide visibility to their works by designating some university blocks, buildings, and spaces after their names. Annada Gohain was the first woman to graduate from the UNSW’s School of Chemical Engineering. All of a sudden, her personal achievement became a collective pride for all, and a buzz across the diverse media platforms.

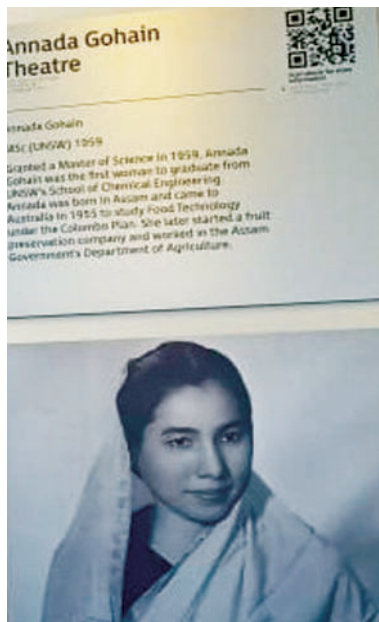
What a gesture of appreciation by a university for the past pupils and a way of inspiring the future ones!

Annada Gohain was born at her mother’s parental home in North Guwahati, Assam. After completing her BSc in Chemistry, she briefly worked in the Department of Agriculture, Government of Assam in the early 50s. But soon she left for Australia to pursue a specially designed course in Food Technology under the Colombo Plan program at the UNSW. On completion of the course, she stayed on to do her post-graduation which required her to write a thesis, which she wrote - titled ‘Production of high-quality orange juice



all sold in markets across the region and even exported under the brand 'Megfruit' reduced to simply MEG later. Interestingly, because of her expertise and commitment to the development of the incipient fruit processing and preservation industry, she continued to work in Meghalaya on deputation till 1979.

She eventually returned to Assam and was equally active in taking for the Government of Assam's Community Canning movement. She retired as the Additional Director of the Department of Agriculture in 1987. Her health was affected by a severe



case of rheumatoid arthritis soon after retirement, but she insisted on writing and engaging on the subject of her passion. She was married to Jitendra Nath Gohain, a civil servant who was himself deeply engaged on various issues across the northeastern region.

She passed away in 2011 after a prolonged illness. But she left behind a rich technological and entrepreneurial legacy for the posterity of the region. ■

Brahmaputra Radio FM 90.4 Mhz! Dibrugarh

Lending voices to marginalized communities in Assam

Good morning! You are listening to Radio Brahmaputra FM 90.4 MHZ!

A lilting voice from its popular radio producer Pinku, fills the morning air, as he announces in local languages the day's programme from its Majjan ghat Radio Station, located close to the southern bank of the mighty river Brahmaputra in Dibrugarh. It's the first grassroots community radio station in the northeastern region run by a young team of self-taught radio enthusiasts under the helm of Bhaskar Jyoti Bhuyan, an award-winning community radio entrepreneur. "We are not only the oldest community radio in the region, but it is also a multi-lingual broadcaster, producing stories in five local languages – Assamese, Sadri (spoken by the tea garden communities), Deori, Hajong, and Mising, the indigenous tribes of Assam, to reach out to the remote, isolated, and marginalized communities," Bhuyan said.

The Brahmaputra Radio broadcasts daily a bouquet of programmes between 7 am and 10 pm, which can be heard across the districts of Dibrugarh, Dhemaji, and parts of Sivasagar. Some of the popular productions are: '*Puwar Brahmaputra*', '*Brahmaputra Live*', '*Katha Brahmaputra*,' '*Ajir Brahmaputra*,' '*Hello Brahmaputra*,' '*Swastha Sankalpa*,' (all in Assamese Program); '*Cha Gaser Maje Maje*,' '*Yuwa Santhi*,' '*Man Ker Awaz*,' '*Janboi Awa*' (Sadri program got tea garden communities) '*Phola Aagon*'

(Hajong program), and '*Igarekun*' (Deori program).

The Brahmaputra Community Radio Station (BCRS) was set up in 2010 with an initial grant from UNICEF under the aegis of the Center for North East Studies (C-NES) and Policy Research, founded by noted journalist and author, Sanjoy Hazarika. But soon, Bhuyan said the BCRS ran into rough weather with dwindling financial support while setting up rudimentary infrastructure, training local staff, and aspiring volunteers for field works and production of stories. "It was really tough to continue activities under these severe constraints," he recalled. "We were literally left to fend for ourselves, but despite the fund constraints, we refused to give up, and instead, we invested all of our passion, drive, commitment, and patience in fieldwork and production of stories at our tiny studio," he said.

During 2009-2014, the community radio worked on specific issues – education, health, and sanitation, including reproductive health, menstrual hygiene of girls and women, pregnancy and prenatal care of expectant mothers, and childcare, etc., with a special focus on the disadvantaged people from tea gardens, isolated villages and other rural communities. The radio team members who were trained community producers from local communities, reached those places where mainstream media would rarely go – remote tea garden areas,

chapories, and island villages – to tell the stories of sufferings and aspirations of the local communities and their daily struggles for existence. The community radio also featured their rich culture, festivals, songs, and dances. In the beginning, all these community stories, interviews, songs, and conversations were recorded in a tape recorder, and after editing and final production at the studio, these were narrowcast in villages for the targeted audience. Later, audio tapes and cassettes were replaced by CDs/DVDs and pen drives for

and crafts. It now has a reach over lakhs of tea gardens and riverine population, including small towns and urban locations across the three districts. “Through these community outreach initiatives, we are trying to educate, encourage, and empower them,” Bhuyan adds. With the gradual penetration of the internet and digital technologies, especially smartphones, communities are catching up fast to take advantage of social media.

“We have now more audience on these platforms than on radio, who listen to our podcasts and other

Pulikkali, the tiger dance of Kerala

On the fourth day of Onam, one of the most popular cultural festivals observed by the Malayali communities in Kerala, a unique display of folk performances unfolds on the streets of Thrissur and Palghat areas of the coastal state: *Pulikkali* – the tiger dance!

Professional folk artists paint their bodies resembling lions, tigers, and leopards before joining the colourful procession, which is watched by thousands of local people, including tourists from all over the country and abroad. The folk dance mimics the cunning acts of tricks and maneuvers between tigers and the hunters during the street procession.

“In my childhood days, I had seen another version of this folk dance at our hometown in Southern Kerala during the Onam festival,” recalled folk artist-painter-musician Durga Das. The number of tiger dance performers was much less, he said. But what was interesting was that there used to be a comic character called *Saayip* (foreigner), whose role was to shoot a tiger at the end of the folk dance.

“The *Saayip* must move clandestinely to evade the sight of the tiger and find a vantage point from where it could hunt it down. But the way *Saayip* took steps and made moves to enact that tiger-hunting scene would always produce mirth and rapturous applause in the spectators,” he said.

“Tiger steps will be rhythmic and will try to intimidate children and other onlookers. Sometimes, they will show their acrobatic skills. At



Bhaskar J Bhuyan (seated) with his young team : (from Left) Chandrama Bharali, Rumi Naik, Kritamjit Hajong and Pinku Gohain

narrowcasting the pre-recorded programmes.

The radio station became technically operational in 2015 after it was granted a Wireless Operational License. It’s now broadcasting on FM 90.4 MhZ. It engages with rural and tribal communities by using new media and participatory tools to amplify their voices and views on a wide range of issues – ranging from public health, education, agriculture, gender, environment, and livelihood to local culture, art,

radio stories on Facebook and other media platforms,” he observed. Of course, finding resources to sustain these ongoing efforts remains a major challenge for the Brahmaputra Community Radio. ■

times tigers will try to attack the *Saayip* the hunter and he in turn will always try to keep himself away from the sight of the beasts and wait for an opportune moment to hunt them down. A typical rhythm on *Chenda* (Kerala drum: *Asura vadyan*) for this dance is followed - *Dilla dillam, dila dillam...dil dil dil ...Dilala dillam...dila dillam...dil dil*. In the end, there will be a shooting sound with the bursting of crackers, signifying the defeat of the tiger.

"I don't see this form of dance anymore, perhaps it has become extinct," he thought. Earlier, the so-called scheduled caste and tribal communities only performed this dance, but later, it was taken up as an Onam festival event by numerous fine arts clubs and enthusiasts. "I do not know whether it has some connection with the mythology of Onam in which the Demon king Mahabali was thrown into the depth of the nether world, (*Sutala Patala*) by the Vamana, one of the avatars (incarnations) of the Hindu God Lord Vishnu. Subsequently, of course, Vishnu allowed the deposed king to visit his subjects once a year on the

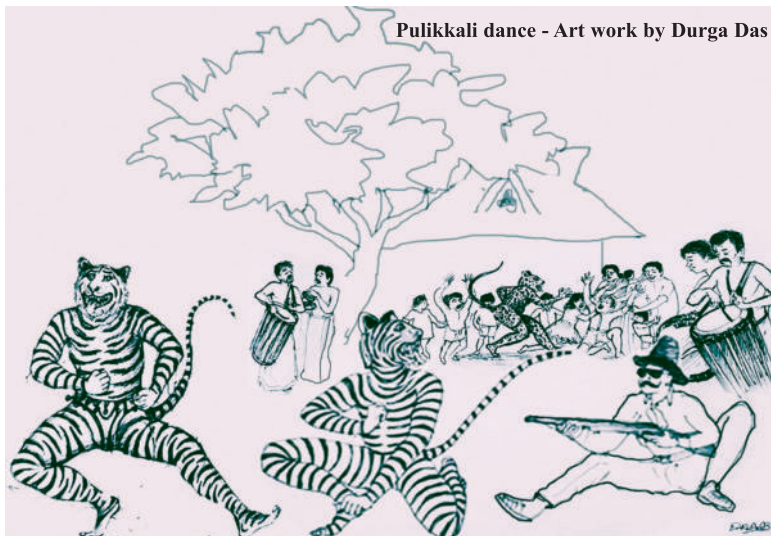
auspicious day of Onam," he wondered. He felt this Indian mythological tale had some similarities with a Mexican tale in which the Jaguar God was defeated by the Spaniards. In northern Kerala, however, the role of the hunter-comedian is not seen during the Pulikkali.

Talking about the mythological origin of the folk dance, Mr. Das observed, "Tigers and leopards are abundant in Kerala region of the Western Ghats mountains and there is a long history of Tiger-Human conflict as both see each other as an intruder into their self-defined, and often overlapping territories. This ancient tension between the beasts and the agrarian communities may have been expressed through these folk dance forms. Another plausible explanation may be that since the early performers were from the so-called lower casts and always lacked the money to observe and celebrate Onam, they would go around the villages, wearing tiger costumes to collect money and food items from the general public. Later on, they transformed this into a dance form for artistic performance, instead of



merely using this for the collection of money. But this has to be studied further, he opined.

Most of the performers of this dance were 'Ulladas', a tribal community, which foraged forest to collect food (edible vegetables, fruits, roots, honey, wax etc.) and firewood. They were - and still are - the only people who were allowed to enter the sacred groves without performing any rituals. They can also fell some trees from such forests. They have great skills in basketry and bamboo works, making household implements with reeds, bamboo, and other climbers. So, the beast-human conflict has been almost a daily chore in their life. Nowadays, the new generation of the community is educated and has entered the mainstream of social life, and hence is not quite interested in performing such folk dance. Moreover, there is a growing tendency in some quarters of Malayalam society to reinterpret this traditional dance form and use it as 'the vehicle (Puli)' of lord Ayyappa or the vehicle (*Kaduva*) of the Goddess Durga, absorbing it into the mainstream culture. ■



Save Vultures for safe Environment

Mr. Sachin P Ranade along with two young biologists at the Vulture Conservation Breeding Center in Assam are trying their best to recover the vulture population from near extinction

In India, Hawks and Eagles, Herons and Hornbills, and Black-necked cranes among many other birds, including Great Adjutant Storks and Vultures, are provided with special safeguards under the Wildlife Protection Act, 1972. But unlike these birds of power, beauty, and grace, Vultures are not quite a darling for aspiring wildlife conservationists. Perhaps, a few like Mr. Sachin P. Ranade, may be an exception. For more than two decades, he has been working on vultures and is deeply involved in the vulture recovery initiatives, following the sharp decline in their population since the 1990s in India and across Asia.

Six of the nine vulture species found in the Indian sub-continent have been reported in Assam, and at least three vulture species – the White-backed vulture, the Slender-billed vulture, and the King vulture – are resident birds to the state, which have been listed by the IUCN (International Union for Conservation of Nature) as ‘critically endangered’. Studies say the vulture population, especially of the four Gyps species has dwindled by 97 to 99 percent in India.

‘Unintended poisoning’ by the residual presence of diclofenac drug in animal carcasses is said to be the principal reason for the rapid depletion of the vulture population in the country, including Assam.

Veterinarians generally use this drug for palliative care of dying cattle and other animals. But after they die the cadavers are disposed of in the open and when vultures feed on the dead animals, the toxic strains in carcasses enter their body and impair the kidney functions, leading to visceral gout and death.

Farmers in Assam face also another peculiar problem of feral dogs. After the completion of harvest, farmers generally let their cattle and other animals graze in the open paddy fields when they often come under attacks from stray or feral dogs, causing injury and even death of animals. To avenge the killing of their cattle and economic loss, angry farmers then try to kill the stray dogs by spraying lethal agrochemicals and pesticides on the dead cattle. But in the process, vultures end up devouring the poisoned food and die.



“Vulture is the most efficient scavenger in nature and plays a crucial ecological function by keeping the environment clean and thereby helping contain the spread of any diseases,” Mr. Ranade explained. So, the recovery of the vulture population is critical to environmental and human health, he opined. Mr. Ranade, who is the deputy director of the Bombay Natural History Society (BNHS) was instrumental in setting up northeast India’s first Vulture Conservation Breeding Center (VCBC) at Rani, which is supported jointly by the BNHS and the forest department, government of Assam.

Though Assam lost 99 percent of its resident vultures, the state attracts Himalayan Griffons in the winter months, which indicates that the region still offers a suitable habitat for the vultures. But unless the threat of poisoning is removed, even the winter visitors could be the next target, he warned. Though the use of diclofenac is banned in India, this drug continues to be used. The VCBC maintains aviaries for breeding and nurturing vultures. At present, the center has around 140 birds, comprising adult and sub-adults, which are awaiting their release in the wild soon.

Vultures may have an image problem as they feed on the dead animals and so generally perceived as unhygienic, dirty birds. Unfortunately, they are the victims of human ignorance and negative perceptions. One has to remember that Vultures are not fast breeders. An adult female vulture starts mating from the age of five and produces just one egg in a year. The pair jointly look after the young chick up to five/six months. “They are also very social as much as loyal to their mates till they survive,” a VCBC member said. ■

Forest Commons & *Jhum* culture



Dr. Anungla Aier

Hunger and livelihood have been the most fundamental challenges mankind has been faced with for as long as human history goes, and at all times, the land and its bounties have been the resources upon which they depended for survival. As long as it is taken care of and protected, nature has always come to the rescue to provide for what was needed to secure the future of the generations to come. For too long we have ignored this simple symbiotic relation of our wellbeing and nature, simply because we are blinded by our own greed. In our pursuit of personal gains, land and its resources are being increasingly privatized and commoditized. This scenario is creeping in and being played out even in the most traditional societies of the indigenous communities of the northeast of India, where the natural resources; be it the land, forest and water bodies have always been considered in practice as commons. The northeastern region of India is home to a host of indigenous tribes who inhabit the hilly and mountainous areas of the region. They are known for their *jhum* cultivation and therefore also called as '*jhumias*'. Though *jhum* is a subsistence level form of food production, the people were self-sufficient. Homelessness and hunger were unknown as everybody gets the necessary land to produce the food they needed for survival and food

was to be shared and not to hoarded. Among Nagas, for example, it was traditionally a taboo to sell rice.

The hill tribes of the northeastern region are traditionally *jhum* cultivators and they have a special relationship with the land. For example, among the Naga tribes land was not a commodity to be viewed in terms of economic values only. The very being and identity of the people and their history were scripted within the folds of the hills and watersheds. Every mountain range and the forested areas were named in association with their historical experiences, even the birth of every child recorded in accordance with the cycle of *jhum* and opening of the forest for cultivation.

The folklore and myths of the people are replete with narratives in association with the landscape and, if folklore is to be regarded as the 'pulse of the people', as Muzarul Islam stated and 'peoples ethnography' as

Considering the fact that *jhum* is a labour intensive system, it makes absolute sense to develop such social and cultural practices in accordance to the needs of the major food producing system.

defined by American folklorist Alan Dundes, and also as the 'Idiom of continuance' among the Ao Nagas as stated by Temsula Ao, the land is the canvas upon which the folklore of the people are painted thereby binding the people and the land together as they continuously interact in a symbiotic relationship creating and sustaining the cultural practices through which the land and its inhabitants protect and manage the interests of each other. One such practice is the culture of *jhum* cultivation. I call it the culture of *jhum*



A *jhum* landscape in Nagaland

cultivation because it involves not just the act of food production and land management but the major portion of the cultural life of the people revolves around the *jhum* system. From celebrations of festivals to fixing of marriage dates and conducting other activities outside of the village coincides with and planned in accordance with the *jhum* seasons of forest clearing, burning, sowing, weeding and harvest times. Considering the fact that *jhum* is a labour intensive system, it makes absolute sense to develop such social and cultural practices in accordance to the needs of the major food producing system.

The hill tribes of northeast India are particularly well known for their community land ownership pattern and *jhum* cultivation system. In the case of the Naga tribes, their traditional land ownership and community rights over the land is constitutionally recognized and protected. Much has been talked about and written about the community ownership of land but there are not much details of how it is actually managed, much less is in print regarding the idea of commons in Community lands and the transformation

that has been unfolding in the last few decades and the disappearing commons.

Among the Nagas, land rights are categorized into family land owned by members of a family group, individual private land, clan land owned by members of a particular clan and village land owned by the entire community but controlled by the village council of elders or the chief. Every year the forest *jhum* plots that had remained fallow for the last ten to fifteen years or more are cut open for cultivation. Decisions regarding which forest areas on the mountain slopes to open up for cultivation are made collectively by the village authority in consultation with all the clan elders. If a particular clan or family do not own land in the selected hill slopes or if it was not sufficient for all the members of the group, they are given plots in another clan's land which they can cultivate for the next two years and they in turn will always allow other clans to cultivate in their land when the next cycle comes to their lands. Also, the village authority may allot plots to members if the common village land happens to be located in the selected region of the forest they are opening up for cultivation. This way they had

an assured system of land use and land tenure where every household always gets the necessary land to farm and secure their livelihood. Though the land is owned permanently either by the clan, family or individual, the customary practices and usages provide for time-tested guidelines that ensure that members of the community are granted access to the land for foraging, cultivation of *jhum* and extracting necessary materials for their daily requirements and no household is left without a means of livelihood for their survival. This underlying basis of people, land and community life infused with their cultural traditions determines their distinct cultural and social identity. As long as *jhum* practices remain the major land use pattern, the ingredient of the idea of commons in their land use is protected because in the *jhum* system the user can occupy the land only for the limited time till the next predictable cycle.

DISAPPEARING COMMONS

The traditional mode of production in conjunction with the land use pattern briefly highlighted above in no way could meet the demands of the ever growing onslaught of the market economy, global consumerism affecting and influencing even the far flung villages. The development mantra brought on by the government and other development agencies

entices as a panacea to the woes of their perceived poverty with promises of big money and high returns within a short time; the only thing required in return is the land. But the land is jointly owned by the clan or the community of clans and one cannot sell or do as one wishes without the unanimous consent of all the members. But there is also a provision in the customary practice to fragment the land among the members if all agrees and they all get their shares of portions of land as their private land to do as they wish. The only condition being that, they are not allowed to sell or give away the land to an outsider from the village. In some rare cases members are forfeited their land rights in the clan owned lands as punishment for crimes committed against the community. In such cases the land in question either remains within the clan or they may decide to sell it. The process is gradual and may take effect in one or two generations but larger tracts of land are slowly becoming more privatized than community owned.

This is also the space where promotional programs encouraging plantations of long-term cash crops such as timber, rubber, palm oil to name a few finds ideal grounds for pushing capital intensive schemes. The villagers who own the land but hard pressed for cash such as, for children education, medical requirements etc., part with the land in exchange for cash. In some





villages in Nagaland, especially those located in the periphery of the urban areas, the privatized lands are being mined for construction materials such as stones which are in high demands but which also unsettles the land, causing frequent landslides and mudslides. Though no detail study or data is available, it is also observed that in many villages the number of households cultivating *jhum* plots is reducing and there is a growing preference for adopting long-term cash crop such as rubber. With the weakening of the community hold and land becoming more and more privatized, the land use pattern is gradually transforming and the traditional commons to which the people can turn in times of need are slowly becoming inaccessible.

In a society where landlessness and homelessness were unthinkable, it is alarming to observe that more and more people are rendered landless and homeless as they migrate to the urban areas in search of jobs and livelihood after selling off whatever land they had in the villages. While this is a disturbing development taking place in the present generation, what is more worrisome is the thought of what awaits the future generation. Will the remaining commons upon which their ancestors depended for survival still be there for them as well?

Will the disappearance of their common lands that indirectly bound them together as a kin-based society affect the harmonious community life and their sense of common identity? Only time may reveal what awaits the community in future.

We cannot stop the society from changing or the new developments from happening. Therefore, in the given situation, what could be a workable negotiated option that secure the land rights of the community as well as partake in the development? Other than infrastructural development such as roads, for any agro-based development schemes, however lucrative it may seem to be, the investing agencies like the government must consider the long-term social and environmental impact of introducing exotic cash crops. The reason being that Nagaland and the Northeast in general pride itself as a region of rich bio-diversity hotspot and the introduction of exotic crops poses the danger of endangering local faunal and floral species. At the people and community level, such a shift will usher in a process that has the potential of breaking down the balance of the unique rubric

of social and cultural system that binds the people and the land that serves as the anchor of their identity as a people. ■

As long as *jhum* practices remain the major land use pattern, the ingredient of the idea of commons in their land use is protected



COVER STORY

PURANA HAJONG

It's a 'Different World', Cradled in Nature



In the year 2020, when the whole world was covering under lockdown due to the covid-19 pandemic and almost every other place was in dire need of food supplies, Purana Hajong, a tiny tribal village in Assam's Dima Hasao district, was blissfully free of such anxieties. Only thing the villagers were wary of was the 'dreaded demon'. They had made sure no one went out of the village; none of them caught the infectious virus.

They had enough rice stocked up. Generally, every household in this village has stores of rice that would last for more than a year, perhaps even for two years. Then once again, as if to proclaim their self-organized village support system, during the massive landslides and floods of 2022 that washed away roads and blocked all communication within the district,

By Linda Chhakchuak

they effectively proved their ability and resolve to tide over such crisis. They can look after their daily needs for sustenance without any hiccup, at least, as far as their basic food requirements are concerned, ensuring long-term food security for the village.

In this context, what could have happened in a big metropolis? Food crisis in cities might emerge in a few days or weeks as soon as the commodities on their supermarket shelves flew off, and if supplies were cut off. This was experienced and seen during the unprecedented sway of the pandemic, when the production, manufacturing and supply chains were all but cut off and some ceased to function then.

For a die-hard believer and hunter of the holy grail of doomsday survivalists, or to be more specific, the single-minded researcher doggedly seeking a 'nature-endowed, sustainable life-style' as

an alternative to a rapacious 'capitalist model' of 'development,' based on mindless extraction of nature and profiteering, this village of indigenous Dimasa community perhaps offers the nearest version of that dream and all that it could mean to a world in turmoil, an Earth in crisis, haunted by the fear of ecosystems collapse and mass extinction, and which medley collectives of desperate people all around the world are relentlessly searching the skies, the far-off lands, and the deep seas for a vision and communion with the unseen to find a gateway, shunning the all encompassing and all pervasive but broken path of globalized modern life.

What the years of pandemic and lockdown exhibited was that the Purana Hajong people could look after themselves and would not starve to death even if all the supply chains of the world got snapped off. They are not plugged into the global supply chains, trade networks and financial systems which would otherwise have sucked them into the 'normal' global turmoil of monetary markets.

But does just being food secure make that indigenous Dimasa village so special? Or, is it anything to do with the Dimasa community's way of life, its cultural norms, belief systems and its indigenous concepts of the natural world? Could these indigenous concepts help us articulate a new narrative or frame a set of guiding principles for creating that cherished alternative human future? Food, clothing and habitat are the core elements of human existence, and every individual or community must have knowledge, skills and materials for providing these bare

necessities of life. Food is the fuel for maintaining the body. Besides ensuring food security, the inhabitants of the Dimasa village also boast of fulfilling two other basic needs – weaving and housing – by using materials derived from the surrounding forest. The communities, which live within the limits of their respective local ecological setting and manage to sustain their lives, are generally recognized as 'ecosystems people'.

NC Hills District map showing RF, PRF, USF & other areas



It is not a coincidence that most of the world's remaining forest, wildlife and biodiversity are found in those bio-geographical regions, especially, the tropical rainforest areas, which are home to nearly 300 million 'ecosystems people' of diverse ethnicities, communities and cultures. In fact, the Northeast India-Southeast Asia massif is one of the last three surviving tropical rainforest regions of the world, besides the Amazon (South

America) and Congo (Africa) basins. India's northeastern region-comprising states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura - is an extended part of the Eastern Himalayan landscape that borders, as well as connects, the Southeast Asian biospheres. In other words, it lies at the intersection of Indo-Burmese and Indo-Malayan ecological realms, which makes it one of the world's mega biodiversity centers with profusion of endemic floral and faunal diversity; it is also home to hundreds of diverse ethnic communities – settled in the valleys and the surrounding hills - with their distinct languages, culture, food production systems and cuisines.

The region is drained by two major river systems – the Brahmaputra and the Barak along their numerous tributaries, flowing out of the catchment forest in the hills and mountains surrounding the two major valleys of Assam.

Karbi Anglong and Dima Hasao, the erstwhile United Mikir and North Cachar Hills, are the two hill districts of Assam, named after two major upland indigenous communities – the Karbi and the Dimasa respectively; though several other scheduled hill tribes are also settled in the Dima Hasao district along with plains people who went there as traders, shopkeepers, government employees in the railways and administration - teachers, lawyers, money lenders and bankers during the British Raj and after the Independence.

In the past decades, though the region has undergone sweeping



Purana Hajong village overlooking the Langthing-Mupa forest range in northern Dima Hasao District

changes with massive expansion of economic infrastructure – highways, railways, large dams, energy utilities, transmission lines, municipalities and urban cities, much of the upland areas remain relatively ‘under-developed’ and inaccessible. Thousands of villages across the hilly and mountainous areas in the region are left to fend for themselves. These villages of indigenous communities exist like a ‘village republic’ in inaccessible, remote areas, each having its own governing institutions, customary rules and practices.

Purana Hajong (‘Purana’ means ‘old’) is one of the oldest settlements of the Dimasa community, which is still holding out relatively as a self-sustaining unit till date and has retained almost all the aspects of its socio-cultural and ecological knowledge, customs and practices,

and successfully managed to survive and bring up generations within the means of what is provided by the natural environment they inhabit. Originally, the village was set up at a higher location a few kilometers away from the present site, which is now a part of the Langthing-Mupa reserve forest landscape. A large chunk of the old village and its surrounding upland forest lands where they claim to have practiced *jhum* or shifting cultivation, have been declared as ‘reserved forest’. Over the years, the ancestral village boundary that extended ‘beyond those hills’ acquired new meaning with incorporation of much of the ‘village fallow forest commons’ by the forest department, and emergence of new Dimasa villages.

We are living at the present location perhaps for the last five or

six generations,” recalled Gopendra Kemprai, the former village chief (*Gaon Burah*). Now in his late 70s, he said his ancestors were among those families who moved with the Dimasa kings when the kingdom shifted its capital from Dimapur (now in Nagaland) to Maibang, and later, to further south at Khaspur, near Silchar in the Cachar district of southern Assam. “I have forgotten much of what our elders had told us about our migration and settlement history of our village,” he sighed.

The Purana Hajong village area lies within the mutually accepted boundary by the neighbouring villages - ‘Nutun Hajong’, which is actually the extension of the old Hajong village, in the north, ‘Drang Bathari’ in the east, ‘Purana Wadengdisa’ in the west, and ‘Nutun Nobodi’ village in the south. Its

nearest town, Maibang, is about 18 km away from the village that falls under the Diyung valley Community Development Block; the district headquarters, Haflong, is about 75 km towards south.

In a way, Maibang is the only link between their ancestral past and the modern civilization. Villagers from the adjoining areas descend on the railway township at the weekly market carrying farm produces and vegetables on headloads or in whatever mode of transport they can afford or manage to hitch on to sell and earn some cash. And with that little money, on their way back to village, they may buy what they need or something for the family.

Currently, altogether 48 families belonging to five Dimasa clans – Kemprai, Langthasa, Bathari, Johri and Nunisa - live in the Purana Hajong village. Most of the villagers have not gone to school, some of them just know how to write their names. The literacy rate of the village even among the younger generation is about 42 percent, much below the average state standard, and among the village literate, female literacy is barely 33 percent. There is not a single government employee among the inhabitants of this village; a few of the younger persons employed in some government departments, who have left the village and are living in nearby towns.

The village is perched on a hill, like most of the Dimasa villages in the district, endowed with bamboo groves and natural forest, which provide them with all the basic needs. Nature is the giver, the source of sustenance for the community, and is regarded with awe and deep gratitude. It is this reverence for nature, or the eco-spiritual understanding of the natural world, which has shaped the indigenous world view, knowledge and belief system. Though the Dimasas have been exposed to a

long acculturation process amidst the neighbouring Hindu communities and their pantheon of gods and goddess, the hills dwelling Dimasa communities continue to follow their indigenous faith and belief systems.

Madai, Daikho: Gods of varied ecosystems

The Dimasas believe that the various realms of nature – forest, river, trees, rocks, animals, rains and thunder, among other natural objects and phenomena – are the abode of specific spirits or deities – *Madai* in Dimasa language. Many of these deities are the progenies of the mythical ancestral gods who, according to the Dimasa folklore, emerged out of cosmic eggs. *Sibrai* is one of the most influential Gods revered by the Dimasas. Broadly speaking, there are 12 such sacred sites or *Daikhos* – ‘a sort of geo-ecological spaces’, says Dr. Uttam Bathari, a noted Dimasa scholar, which are spread across the Dimasa inhabited areas; nine of them are located within the Dima Hasao district, and one each falls in Karbi Anglong and Cachar districts, while another is found near Nagaon. Each *Daikho* has a presiding deity and is assigned to one or more male clans (*Sengfong*), who are responsible for managing the mythical shrines.

These spaces, which are highly rich in forest and biodiversity, are protected and conserved with great care. A special priest, known as *Jonthai*, representing the clan or clans, looks after the respective *daikhos* and supervises all ritual activities, especially the sacrificial rituals held every year. Dr Bathari said, “the bio-cultural ethics” of the community is clearly reflected in its way of use, nurturing, protection and conservation of various plants, trees, forest, rivers and other natural resources. They are always mindful of the consequences of offending the deities or natural



spirits by their behavior or acts of trespassing into forbidden areas. Such transgression may happen as they often venture into such spaces for various reasons – farming, hunting and foraging, seeking house building and tools making materials, extraction of bamboo and timber and other forest products.

Therefore, the Dimasa express their obeisance to these deities through various rituals, prayers



and performances. Each family or a member of a family or a clan worship their chosen deities and seek their blessing for the wellbeing of the family and for good harvest. There are also annual offering and sacrificial rituals performed. The most significant community ritual of the Dimasas is *Gerba*, which is performed in the village after the harvest festival at the commence of the newyear. Strict rules are

enforced during the *Gerba* rituals; no one can enter or go out of the village until the entire process is over. This ritual is observed to cleanse the village of all sorts of evil spirit as well as for the protection of all the inhabitants of the village for that year.

***Phadain*—farming in nature with forest**

Every aspect of the community life is linked with the farming

calendar and the indigenous food production system - ubiquitously known as, *jhum* (*'Phadain'* in Dimasa tongue) or shifting cultivation. This ancient culture of food production has evolved through a symbiotic relationship with the natural landscape it inhabited for thousands of years. The entire farming system, from seed selection, protection, conservation and sowing to

harvesting and storage, is self-organized and managed — all based on their ecological knowledge passed on from their ancestors to the succeeding generations. Tools and techniques are simple; no external support is required.

However, unlike many of the indigenous upland communities in the region, which have effectively developed a well-organized community-managed system of *jhum* land management and forest commons, the Dimasas at Purana Hajong seem to have allowed the individual families to manage their respective *jhum* plots. From new *jhum* site selection to duration of cropping on the site to the maintenance of fallow cycle — the whole process is decided by each family; no consultation is needed with the village authority. What is common to all is a uniform method of food production on the hilly slopes.

People can decide on their own, whether the next year they will go for a new plot or continue for another year in the same place,” said Joypen Kemprai, the present village chief. All the families follow the age-old farming practices throughout the season. Joypen and his missus, Komita also do the same; they along with the rest of the people of Purana Hajong go about doing their daily routine activities. Being the village chief, he does not enjoy any special power and position, but he is the principal spokesperson of the village; particularly, when it comes to liaising with the outside world.

Everyone has to work to keep the homefires burning. The day’s routine begins for any one, man or woman, with the morning wash, doing the normal chores, and preparing for the days’ work, be it in cities or villages. Unlike in cities, there is no high or low-paying jobs in the village, but there are a plenty

of works to do in their respective ‘field offices’. The land and forest around it are their ‘workspaces’, and the seasonal weather cycle is their ‘boss’, which determines ‘the return’ —productivity and total yield. In the practice of shifting cultivation, there are specific rules that have to be followed if a farmer is to get back a decent harvest of rice and other crops, including vegetables, that they grow in their fields.” We have to be regular and punctual in going to the field or else how will we get food?” Komita explains, matter-of-factly.

The cultivation begins with identification of a new site in the forest. The process of selection of the new *jhum* plot is unique in this Dimasa village, may be in other villages too. The villagers can go and choose any plot of land that suits them to do *jhum*. “Within the village we have our own areas, we know our areas, so each person decides where he will do the *kheti*

(cultivation) and marks out the place”, Joypen said. There is only one consideration here, and that is, whether the land is free of encumbrances, whether human or other-worldly. The Hajong farmers will not select any place at random; they seem to look for some clues in their dreams to secure a safe and fertile patch of forest land. “If a farmer sees a bad dream after picking up a plot, then it is abandoned. This is taken as a sign that the place should not be disturbed. After such a thing happens, we do not go to that place anymore,” the village chief explained.

The selection of individual *jhum* plots is completed by December-January each year. After choosing the spot, they slash down the jungle and leave the vegetations to dry. March is the time when they burn the dried vegetation and prepare the sowing bed. Soon after that they start sowing various vegetable



seeds and varieties of native paddy, maize and several other legume and tuber crops – all planted on a single farm plot. Paddy is the most important crop and particular attention is paid to its cultivation. The farmers seem to know quite well that the top soil on the hill slope should be least disturbed, and so they just dibble to sow all seeds on the ground.

Amazing as it is, on queue comes the Spring shower to wake up the seeds, triggering that miraculous transformation of plants, gradually unfolding themselves from inside tiny seeds, and growing into lush green food forest gardens to feed the *jhumia* families. And when the rainy season starts, many herbs and wild vegetables sprout out on their own to add to the farmers' food basket.

How these seemingly different elements come together and work perfectly in harmony to produce the building blocks of life, that is, food, is an enduring mystery, but so mundane that not much thought is given to it any more. But, as Komita says, perfect timing of work with the elements of nature is required to ensure that there is a good harvest. The fields have to be periodically weeded, come rain or sun, with time precision or else the plants will not grow strong and healthy, she emphasized.

The surroundings of the village are nothing short of magical. It was September and the fields almost ready for harvest of the *jhum* paddy. The space is filled with the bountiful gifts of nature and the air is as pure as one could wish for. Walking to the *jhum* fields is an education in itself. The walk on the forest paths is a trail of peace and contentment. Every step is a revelation of the wonders of life in this village. Every blade of grass seems to be an alphabet of nature written in the most beautiful hand,

telling the on-lookers that all is well. Nalini Kemprai, who recently returned to the village after finishing her higher secondary education at Basabari, about 12 km away, was taking around the village a visiting group of 'deschool' enthusiasts, including this writer; the deSchoolers recognize the existence and vitality of indigenous knowledge, thoughts, and the myriad ways of life and experiences of diverse indigenous communities, outside the western-centric notions of ecology and economy.

On the forest trail at the edge of the village is a sprawling grove of tall mango trees, standing there like the ancient ancestors of the Hajong people; their arms spread out as if to shower blessing on all who pass through under their cool, serene canopy. One of the visitors, Marion, could not help herself but be drawn to the silent giants and embraced one of them in ecstasy. She said one can communicate with trees, which are living beings. The two women, Komita and Nalini, who were walking along, watched in wonder and disbelief, but showed no disrespect toward the guest's unusual act. Meanwhile, other village folk passing by, looked on with curious eyes at these strangers, probably wondering what's so special about these mango trees, which, to most of them, perhaps, would represent nothing more than a bunch of old trees still standing out there, and one day might be chopped off for timber or firewood. But then, the very fact that, the village folk have left these trees intact is a give-away

momentary 'time freeze'. Between July and September, the villagers have harvested periodically most of the vegetables and crops in the *jhum* field, except for the *jhum* paddy, the principal crop for all. All the *jhum* fields amidst forests wore



that somewhere in their collective consciousness they do have a sense of reverence for these ancient behemoths standing amidst them and hopefully, they would keep them and protect them for all time.

Let's go, we are yet to reach the *jhum* fields," Nalini alerted the visitors, nudging them out of

different hues of yellow lush with ripening rice stalks, dancing in the gentle autumn breeze. Some farmers divide their *jhum* fields in two parts, one for growing only paddy and another part for vegetables, particularly pumpkins. But most of the families prefer mixed cropping in their *jhum* fields.

Pumpkins are grown in abundance in the village these days. "It is one of our cash crops, a source of instant money for us," Gaon Burah Joypen pointed out. Everyone calls him GB, short for Gaon Burah. He said pumpkins of smaller varieties grown in the *jhum* fields have good demand in local markets, the nearest being the weekly markets of Maibong or Khepre.

The villagers either carry the vegetable in sacks for selling them on the market day to earn ready cash or, if they have bulk quantity of pumpkins, they call traders or middlemen who come to the village to buy the vegetable, which they later take to different markets outside the district. Pumpkins fetch a reasonable price for them. Joypen and the other villagers said this was much easier than having to take it to the market themselves. Here they do not have to worry about the transport, the sale and there are no left-overs as it might happen if one were to sit with their stock in the market places.

Also, pumpkin is a low maintenance crop. It does not require toil to grow it, and can be stored for a long period. Another *jhum* produce is chilly, which has always a good market price. Ginger also fetches cash income for the farmers, but of late, because of price fluctuation, they grow more pumpkin than ginger.

The Purana Hajong people as a rule do not sell their rice, as they prefer consuming their home-grown grain to the one supplied by



Pumpkins grown in *jhum* fields are in great demands in local markets

the government through the public distribution system. Moreover, for the Dimasas, the local varieties like *bairing* and *maiju* are very important, which they plant in the *jhum* fields particularly for making rice beer, *judima*. A few families in the village have some patches of flatlands at the base of hilly slopes, which are ploughed and irrigated for transplantation of different varieties of paddy.

Sithol Langthasa at 79 years is still actively doing *jhum*. Like every *jhum* farmer in the village, he has a *jhum* plot dedicated to growing *bairing* rice, the prized grain from which the famous *judima*, the Dimasa rice wine, is made. It is a yearly must. *Judima* has now been given a geographical tag to certify that the process of making this alcoholic beverage belongs exclusively to the pool of Dimasa traditional knowledge. It is recognized as a unique product with its own specific process of fermenting, perfected by the Dimasa ancients.

Sithol did not know what GI was, but for him, "*Judima* is the best rice

beer ever, nothing can replace it and will not change it for anything," he swore. For this reason, "I grow *bairing* rice every year without fail. Otherwise, I will not get *Judima*. It tastes better when the rice is from your own field, grown by your own hands and fermented in your own house," he emphasized. No wonder *Judima* plays a special role in their social and cultural life, especially almost in all rituals.

Sithol was also a *Gaonburah* many years ago and sailed through without much problems. He said in his entire tenure as *Gaon burah* he did not face any serious issues. "People choose the *Gaon burah* and it's the people who will throw you out if they don't like what you are doing," he chuckled.

Weavers, Singers, Healers

Apart from being 'a food sovereign' village, Purana Hajong also boasts of its weaving, house building skills and cultural tradition. Every home is a weaving center in this village and every woman weaves her own and her family's traditional wear, *riba* and

Life of a Primary School Teacher

Bapon Kemprai, a resident of Basabari, a village about 15 km away from P. Hajong on the main highway, has looked after the school for the last 18 years. There are 20 students now, but in the past, very few students were there. Earlier, there were four staff, but now there are only two, one is the headmaster and the other is him. The teacher has to take care of the whole school which comprises classes from nursery to Class V. They are divided into two classrooms in the school which is a pucca house. He feels that he cannot give his best to the students as he has to rush from one class to the other.

“It’s a loss for the students,” he said wishing that there was at least one more teacher. The school starts at 9 am and ends at 1 pm. In the beginning, the medium of instruction was Bengali but it was changed to English in 2021 and started being used for the new entrants at the nursery level till Class II. At the moment, the children in Class III to V are still learning in Bengali medium as their course has to be phased out. All senior teachers studied in Bengali medium. Hindi and Assamese are taught only after Class VI. The school has helped produce four graduates.

It is a pity that Dimasa, the mother tongue of the people of Purana Hajong, is not taught at the primary level. It is only later in the high school that it can be taken as an MIL paper. The Roman script is used to write Dimasa. The teacher worries for the future of his students.

The lone teacher does all things in the school. Besides teaching, he has to care for and look after the nursery kids and the other youngsters who are barely out of their infancy while he runs to see that the children in the other classes get their share of the lessons of the day. He also has to ensure that all the functions required by the state are celebrated such as Children’s Day, Teachers’ Day, and Gandhi Jayanti. Lachit Borphukon Anniversary was added to the list in 2023 by the State Government.

Bapon said he was happy that the English medium has been introduced now. “Duniya (the whole world) is doing their studies in English medium so we need to do that also. Otherwise, we have so many problems even just filling up forms. It is also easier to learn in English,” he opined.

Asked about the future of jhum-based life in the village, the teacher said the younger people had no alternative to *jhum*. If they do not do well in their studies which will help them get a job outside of the village in towns, then where will they find work? They will have to do this work (*jhum*). The youth now have no choice as they have not studied enough to enable them to get jobs outside in the towns and cities. Most of them are class X or so, and with this educational qualification, it is not possible to get jobs. All that they can do is petty business which some of them do, he said. The village has around 10 to 15 such youth. Besides looking after their small businesses, they help out their parents in the *jhum* fields. The girls are invariably engaged in weaving and helping the parents manage the house. They also help the family in *jhum* fields, he said.



Nothing much has changed in the village except that earlier there were only bamboo and wood houses whereas now people are beginning to use cement, bricks, and iron. The community hall is newly built and is made of concrete. The village has also lost much of its thick forest. “One could see deer and many different kinds of birds. As a child, I even heard tigers roar sometimes,” he claimed. About 16 years ago at Basabari where he lived, there were lots of small animals like foxes and deer. He had seen very big trees in the surrounding jungles when he was a young boy. But these big trees were chopped off and taken to the sawmills. He said there used to be a sawmill at Basabari. The government closed down all the sawmills many years ago. ■

rigu, which has helped keep alive the knowledge, skill, design concepts and color combinations in the weaving heritage of the Dimasa community. Some homes even had two or more looms in the premises depending on the number of women in the household. For many of the women, weaving is a source of family income. They get orders from their contacts in the towns where people do not have time nor the knowledge of weaving. It takes time and patience to create intricate designs and colour scheme as per clients' choice, and this has become a boon for the women in the rural areas where they weave the traditional clothes that the city people need.

Every woman, even girls in their teens, weave clothes for themselves and for others who want to buy the weaves. Grigdi Kersha, 20, working on her loom said she liked to weave. One of six siblings, she studied till class V and could not continue her studies as she would have to leave the village to pursue further studies. She had no formal training in weaving, but as is the norm here in the village, she learnt by observation. "I used to watch my mother and sister weaving and doing all the things that one needs to put up a loom," she said. She not only weaves for herself but also takes orders from people who call her over the mobile phone. They give her the design and accordingly, she makes the *rigu* and *riba*. Yarns are also supplied by the customers. She earns quite a good amount as commission and service charge for her expert weaving.

It is actually the efforts and skills of these women in the villages who churn out the tribe's colourful fences, to make sacred alter for various rituals, and as a delicious food item when its plants shoot out of the ground in spring, to name just a few ways it is used.



What makes the upland Dimasa community different from many other indigenous tribal groups in the region is perhaps that the former recognizes the importance of individual freedom in matters of resource use within the village, instead of stressing much on collective village governance and community-based natural resource management. For example, when asked whether the village had rules for extraction of timber and other

forest materials, village chief Joypen said, "any one can cut any tree from the village forest for household purposes, say, for house construction or making furniture. One does not need any permission from the *Gaon burah* for that. But no one is allowed to fell trees for commercial gains."

The only time community seems to come together is during the annual harvest festival, *Bushu*, which is celebrated for about a week

between months of January and February. Nalini, daughter of ex-*Gaonburah*, said the whole village would participate in various activities marked with song and dances. Riyem Bathari, now in her mid-seventies, is sort of a music icon of the village, who makes her own musical instrument called *Khramdurbringi*, made out of reeds/straw and is fashioned like a harp. She sang many songs for the visitors who came to listen to her songs and hear her story. Most of these were the tribe's ancient folk songs that tell the stories of their history and life in the mountains. Nilo Kemprai, 56, is a balladeer, who composes songs extempore as any occasion demands. She exactly did that, welcoming the 'deSchool' members and showering blessings on the team for visiting their village. She said she had songs while working in the jhum fields where women sang as they worked, even as a young girl at her maternal home village. She came to Purana Hajong as a young bride from Kalapong Basti.

Nilo is also a healer. She said there were certain '*mantras*'—words or sounds having divine power - for healing broken bones or pain in tongue and eyes. "I was taught by my mother, and she learnt it from her grand father," she said, adding that such knowledge was not the sole heritage of one family but 'anyone who wishes', can learn the *mantras*. There is no government health center close to the village. People seek her healing powers when in pain, but there is no payment as such sought from the patient for her service, except in the form of a thanksgiving with some money and *Judima*.

There are village priests, too, who have to keep the residing families and the village as a whole free of diseases or evil spell of any angry spirit. Seventy-year-old

Gendo Kemprai became the village pujari because no one else was there. He said all the others had declined to take up the responsibility, so he decided to volunteer. The whole village agreed to it and now he is recognized as one of the priests of the village. It is his duty to conduct the annual prayers and rituals. He said," the rituals and prayers are

held for the wellbeing of the people, to chase out sickness and diseases, for protection from calamities, and for good weather." He called it '*Kachari ka niom*', literally means, 'Dimasa traditional religion', which they have to perform once in the month of December. The village lays great importance to the Hajong Beel (lake) puja. Gendo said if they failed to perform these

Nilo Kemprai with her husband and daughter-in-law



rituals, they believe that sickness would sweep through the village and bring unhappiness everywhere. He specifically mentioned that some people may even go mad while consuming alcohol.

What's there for future?

Purana Hajong is not a paradise. It is not an 'off-grid' community built up by a bunch of urban elites who felt the guilt of living the easy life of consuming their own home planet, nor by the so-called woke, nor by the rich and famous, nor by the ones searching for spiritual succour after the chase of the capitalist dream of 'prosperity' turned hollow, nor is it an outcome of any modern experimentation on sustainability. It is not a refuge set up by some wealthy urban elite, who had the money to pay for everything they wanted but now want to live away from the material comforts of city life and come back to live in nature, which is a fashionable fad.

It is the real lived life of people who are still living - even in the midst of today's high-tech modern life - with minimal technology for negotiating their needs directly with nature, just as the ancestors did for the past thousands of years. While their minimalist lifestyle is admired by starry-eyed outsiders like the deSchool members, including this writer, it is not their choice as revealed by them in conversations that strike deep into the dilemma of the so-called environmentalists and ecologists, who talk about saving the earth and its ecosystems under anthropogenic threats, but are not prepared to come out of their comfort zone and yet cannot find a way out of the pursuit of capitalist 'growth' rates and high pay cheques despite the philosophizing.

"Hamkobhi gari, bangla, college, university, office ka kam,

paisa, aap ka jaisa chahiye, aisa garib rehena nahi mangta, (We also want cars, buildings, college education, office jobs and salaries like you all, we don't want to live like this as poor)," was the reply from them when the visitors expressed their admiration for their way of life in harmony with nature, and as the custodians and saviours of indigenous biodiversity, native seeds and plants, as well as the upholders of the cultural identity of their tribe.

They said that all the praise is very well but they have to survive as per the requirements of these



On her way to *jhum* field with a smartphone as companion

times. The youth need jobs, the local school needs improvements so that the children can have better education to compete with the rest of the world, said Nibosh, the son-in-law of the *Gaon Burah*. The youth, like Dinesh Langthasa, said that even graduation does not guarantee them a job now and they have no idea how their future will be. Others, like Uttam Kersa, said he does have ideas but, where is the support? He asked.

Encounter with a Tiger



Riyem Bathari was a young girl in her 20s when she came to Purana Hajong after her marriage. Originally from Mahur, she settled into her new life comfortably. She remembered that the village then was located further up in the hills. It was quite far from the roadside. They had shifted to the present location, which is near the main road, much later. Asked if she had ever been afraid of walking through the jungles to the *jhum* fields and whether she had close encounters with any of the big animals like the tiger, she said she had not seen any tigers but experienced its unseen presence once.

"One day as I was walking home after work, our dogs which usually follow us around were barking like anything. It was a tiger. I could make out from afar in the twilight even though I did not see it directly. The barking suddenly stopped and the dogs didn't come back; the tiger might have killed the dogs and taken them away. I ran for my life," she recalled, saying that even today she vividly remembers that incident. That was the closest encounter with a tiger she had. Occasionally, they did hear the roar of a tiger, though it was rare. Riyem was one of the few people who had an experience involving the tiger in the jungles of the village. ■



Nibosh and Nalini (below) were the two ‘deSchool associates’, who were the guides and interpreters for the visiting deSchool researchers at Purana Hajong

Nibosh Nunisa, in his late 20s, is the son-in-law of Gaonburah of P. Hajong village. He married to his only daughter, Momitha Kemprai. Jovial, active and outgoing, studied up to class X, and is now an active member of the village. He speaks ‘Haflong Hindi’, a common *lingua franca* in the Dima Hasao district of Assam.



A Village Allrounder

Basmola: To her daughter, Nalini, she is a role model, an allrounder in the village. She said her mother always deeply regretted that she did not have any formal education, though as a teenager she always yearned to go to school. Despite this, Nalini said her mother was top of the rung;

Nalini Kemprai, a ‘deSchool’ associate in the village, studied in this school till class V after which she went to Basabari, about 15 km from the village to continue her studies. She is currently trying to complete her graduation but is finding it difficult to do so as the medium of instruction has changed from Bengali to English. Her entire school education was done in Bengali language and the sudden change to English has left her handicapped. But she said, “It is good that the system has changed to English now for the sake of the young students.”

whether it was in weaving, tending to the *jhum* and caring for the plants or in participating in important religio-cultural events of the village.

During the celebration of *Bushu*, one of the most important festivals of the Dimasa, the whole village gathers to dance and sing their songs. The call of the *muri* draws the people to the ground where they all, young and old, line up to dance in a rhythmic group swaying and stepping to the music as one of the elders sings. Basmola is known as the best dancer and she can dance throughout the night without getting tired. The group dance is a form of worship and all the people of the village join in the celebrations which continue non-stop into the next day. Nobody has ever formally learnt the steps, no one teaches anyone else what to do, and there is no choreographer for the dance. But each one eventually gets the hang of it and then knows it by observing and participating. ■

Along with the pressure of keeping up with the modern ways, as members of the community of this unique village, they also have the responsibility of imbibing as well as transmitting the intrinsic values and rationale for perpetuation of the ancient indigenous food production system – rotational agriculture or shifting cultivation - on hill slopes and its unique socio-ecological functions, the indigenous knowledge of their elders, the forestlore, and their spiritual links with the unknown dimensions of the universe. No school education can teach them this, but it can only be transmitted through the daily interaction with their elders and nature in the village.

A *jhum* economy does not have much cash in circulation as its main function is to ensure food security. *Jhum* is a small scale, much less intensive production system of the upland indigenous communities; they literally live in a different world. Its continuation depends on the protection of existing common lands, which are equally shared by the members of the community. The food is their wages, unlike the urbanites who have to work for cash and then go and buy the food they need from the markets.

For the *jhumias*, a little cash comes to hand when they sell the surplus or their *jhum* cash crops in the local market. These patches of ‘living forest farming’ are the last remaining spots on the earth where the original varieties of food crops and other important endemic plants are still found, maintained and used.

Without these mountain sanctuaries and its people, these important biodiversity spots, including the micro-world of insects and bio-organisms, so crucial for the continued existence

of the original food and seed chains, would snap, leaving nothing for agricultural scientists to fall back on for reviving and sustaining the industrial agriculture.

The threat of extinction of original crop genetic diversity is a frightening and real one, with the race for producing fast and high-yielding crops, or the so-called ‘climate resistant’ varieties by genetic manipulation of crops and organisms in corporate labs, and the aggressive forays of markets into these remotest corners. The giant multinational corporations dangle the promise of money and economic prosperity in exchange of tribal and indigenous lands to promote commercial monoculture plantations and cash crops or forming and infrastructure developments.

The global elite are fully aware that at the heart of deepening crisis in the world is over-exploitation of natural resources in pursuit of unbridled economic growth



The global elite are fully aware that at the heart of deepening crisis in the world is over-exploitation of natural resources in pursuit of unbridled economic growth. More ‘growth’ means more exploitation of nature and its conversion into profit. The more money they make out of manufacturing consumer goods out of nature, the more ‘profit’ is made which is the only aim of current capitalist economic model. The more money one has gathered in terms of cash, bank accounts, stocks, shares and properties bought by the profit, the higher the status of a person in the capitalist scheme of things. This value system has to give way to ‘downscaling of growth’, not so much as a moral issue but because it is a necessity for survival of the planet Earth, the humanity and all other living beings.

Purana Hajong, one of many in the north east region of India, remains outside this voracious system, not really because of its choice, but due to its remoteness. It is thus, only a matter of time before it is also swallowed up into the system. But it is these communities which remained standing when the unprecedented disasters, such as the Covid-19 pandemic hit the world. Which is why it is important to recognize that these are the remnants of original and sustainable economy of the earth’s first inhabitants, and therefore, durable and sustainable.

The urgent need is for enabling policies which will ensure that these golden spots – many of them depleted and bare now – are restored, expanded, nurtured, and that their beleaguered guardians are protected and supported, as they are the ones who provide the only true life-style and philosophy for people on Earth staring at nothing less than apocalypse and extinction. ■



Legend of the Tortoise Lake

Dimasas believe 'the guardian spirit' of the Hajong village resides in the water body and must not be touched without seeking its blessings

Centuries ago, soon after the Dimasa kingdom was shifted to Maibang in North Cachar Hills from Dimapur, the Dimasa subjects settled down in tiny villages all around the thickly forested hills and the valleys. Two major rivers, Mahur and Langting that flow out of the northern slope of the Barail hill range, traverse through the valleys, enriching the soil for paddy cultivation, before joining the Diyung river in the north. Most of the landmass between the two valleys forms a part of the Langting-Mupa reserve forest,

incorporating the ancestral lands of many Dimasa villages. Hajong is said to be one of the oldest villages of the Dimasa and is associated with the legend of the Tortoise Lake. The original Hajong village lands, as Dimasa elders say, now comprise areas of three separate Dimasa settlements – Purana Hajong, Natun Hajong and Drang Hajong villages.

The history of the sacred Tortoise Lake, also known as Hajong beel, is shrouded in mystery; there are numerous versions of the Dimasa folktale involving a giant serpent and the water body, which is considered sacred to the Dimasa

community. But the most popular one goes like this, which was narrated by former *Gaonburah* of Purana Hajong, Gopendra Kemprai:

It was the time of one of the Dimasa kings who ruled in Maibang, the land of plenty of rice—'*Mai*' means rice, and '*bang*' means 'in plenty' in Dimasa language, together it may be described as the 'rice bowl'. It so happened that once the then king wanted to extend the existing pond near the Hajong village. The villagers were engaged for this job. Once the villagers held a feast and dumped all the leftover food in one place. Next day, when

the villagers returned to the worksite, they saw there was no trace of any food waste. The same thing happened the next day. The villagers got curious as well as worried and wanted to find out the mystery behind the disappearance of the food waste. At night after the meal, a few youths stayed back to see what happens.

As they waited in darkness, suddenly they saw a giant snake, emitting bright light from its body, slithered in and started devouring the leftover food. The young men were shocked at the sight and without wasting any time, they attacked the serpent with sharp machetes and sticks and cut it into two pieces. But one part of the snake managed to escape. The other half was thrashed into pulp. Strange things began to unfold soon after - a huge earthquake shook up the area and the whole ground sunk and turned into a water body. The entire village along with the people went down under water. Only a widow and her young son escaped this fate, as they were warned of such a tragic event in a dream. They had even gone to the king to give him the message to stop the digging but it went unheeded. They then fled the village before the incident, heeding the dream that told them to leave the village immediately.

On hearing the news of the strange incident, the king rushed to the place and ordered a search and rescue mission to retrieve bodies and whatever possible. But the prince died soon after. This forced the king to abandon the project and went away with his followers to set up base in another place. Other versions say that during the operation, the king died along with other workers under mysterious circumstances. The Dimasas believe that disaster was the result of an offence against the resident spirit of the area for desecrating its abode.





Those who died in drowning in the lake, turned into turtles, many believe.

However, in another version, there is a twist in the serpent's tale. There is no mention about the construction of lake by any king in the story; it talks about a giant python, which used to live in the forest at Hajong village. One day, some villagers saw the python in the jungle and hunted it down for meat. They chopped it into several pieces and distributed it to all the families. Every one ate the meat, except one widow. That night she was warned in her dream of a severe earthquake that would destroy the village for killing the python and so, she was told to leave the village, right way. The following morning, no sooner had she and her son left the house than the entire village began to crumble down under the force of a powerful tremor which turned the area into a large lake. The Dimasa elders say it was the curse of python that led to the destruction of the village and death of the families which ate its meat. It is believed, all the dead became turtles in the lake. There is yet another story about the mysterious turtles and tortoises of the lake, which talks about the jackfruits falling into water from the trees surrounding the lake, and those fruits became turtles.

The Tortoise Lake was always known as Hajong Beel, named after the village. The local people living in the vicinity of the lake have always been wary of the guardian spirits of the Beel and stayed away from the place unless they had some work around that area. The villagers started performing rituals or 'beel rituals' to assuage the hurt feelings of the guardian spirit of the lake. Gopendra, now in his 70s, said he remembered that his grand parents used to perform the rituals regularly. "It is dangerous to neglect

and not do the rituals," he was told. The villagers have to propitiate the guardians of the lake, which they do during the months of May, June, July. If they neglected the offerings and prayers, they feared, there would be sickness, crops might not grow properly and people would have problems.

He said, initially they did not do the rituals but when the people of the village constantly suffered ill health, bad harvests and different tragedies, the spirit of that lake appeared in dream of a villager and told him to go there and perform rituals. After that people started to performing rituals in the lake. They believe it helps them. There were times in the past when the rains failed and drought like conditions prevailed. At times like this, special pujas for bringing the rains were held in the lake. The last time such a thing happened was in 1960, he recalled.

There is a temple on the K K Road passing along outside the Hajong lake, which has been built for the Deo, the resident god of the lake, to avoid any mishaps on the way. Accidents happened frequently along this road, and so some Bengali traders and business men who always travelled through this area, built a temple to propitiate the local god, which is now known as Shiv Mandir. Every year, the traders collect money to perform puja, seeking the blessing of the god for safe passage. Now, several villages surrounding the lake also take part in the rituals.

There is a small shrine also inside the precinct of the Tortoise Lake, where two tortoise statues have been placed on the sides under a massive banyan tree. Visitors to the lake take a bow as a show of respect and leave some offerings, including money. Strict rules are followed from the ancient times; no one is allowed to touch

the waters of the lake. A respectable distance has to be maintained from the edge of the lake. The urbanite would probably dismiss this as just safety measures for the visitors, but the locals know better. Many stories have been passed around about what happened to people who disobeyed the rule. The message usually comes in bad dreams, which is deciphered by the local tribal *priest* or shaman, who then explains what kind of rituals needs to be followed to propitiate the spirits of the sacred lake.

Talking about the '*beel puja*' Tonso Kemprai, 70, of Purana Hajong village said, "Earlier, we used to do pujas every year inside the Hajong Beel. But now, for the last few years, we are doing it here in our village." It is called, '*Beel Mada*' puja, he added.

Curiously, for decades this mythical water body remained largely hidden from the knowledge of the general population of the district, mostly due to its remoteness and lack of proper road connectivity. It was a small water body inside the Langting-Mupa reserve forest till 1980, when the district autonomous council initiated a project for renovation and expansion of the lake area in collaboration with the forest department, said forester Sumodh Haflongbar. A joint forest management committee was also set up to improve the forest around the lake by planting different types of tree saplings, including fruit trees and medicinal plants.

Over the years, people's curiosity grew about the Hajong lake and its mythical origin, especially the folklore associated with the sacred water body. The forest department and the district council are promoting this as a unique eco-tourism site, by organizing 'Tortoise festival' near the Hajong lake since 2013 to create

awareness among people about the rare turtle species and the urgent need for their protection and conservation, including the sacred lake.

Environmentalists say the Dimasa folk belief and certain taboos related to the Hajong lake, have so far helped protection and conservation of the lake ecosystem, especially the rare turtle species, said to be the only natural habitat of fresh water turtles in Assam. However, with spread of modern education, the folk believe and its regulatory practices are gradually eroding, and incidents of poaching of turtles by some unscrupulous youths have been alleged in the

Dimasa folk belief and certain taboos related to the Hajong lake, have so far helped protection and conservation of the lake ecosystem, especially the rare turtle species, said to be the only natural habitat of fresh water turtles in Assam



past. The area around the lake is leech infested, something that might be one of the natural reasons that keeps most people away from the spot.

Recognizing its importance, in August 2022, the Assam State Biodiversity Board has notified the Hajong tortoise lake as the 'Biodiversity Heritage Site' (BHS) under Section 37 of the Biological Diversity Act, 2002. With this, Assam has now three Biodiversity Heritage Sites – the other two being Majuli and Borjuli wild rice (*Oryza rufipogon*) at Borjuli village, Sonitpur.

As per the notification, the Hajong Tortoise Lake BHS covers a total of 526.78 hectares, including the surrounding forest areas of the Langting-Mupa Reserve Forest landscape, located at an elevation between 1627 ft and 1677 ft above mean sea level. "This lake is a natural habitat of critically endangered freshwater 'Black Softshell turtle' (*Nilssonina nigricans*) and endangered 'Indian Peacock Softshell turtle' (*Nilssoniahurum*)," it says. Besides the turtles, the notification adds, the site is also home to many threatened and critically endangered species such as, Chinese Pangolin (*Manis pentadactyla*), Clouded Leopard (*Neofelis nebulosa*), Leopard (*Panthera pardus*), Asiatic Black Bear (*Ursus thibetanus*), Fishing Cat (*Prionailurus viverrinus*), Sambar (*Rusa unicolor*), Western Hoolock Gibbon (*Hoolock hoolock*), Capped Langur (*Trachypithecus pileatus*), Wreathed Hornbill (*Rhyticeros undulatus*) among others.

The Maibang Biodiversity Management Committee is responsible for management of the Hajong Tortoise Lake Biodiversity Heritage Site with assistance from the Assam State Biodiversity Board. ■



It looked more like a barricade than a gate at the entrance to Purana Hajong. It's an old Dimasa tribal village, in the Dima Hasao district of Assam. The barrier has been built in such a way that, it seems, it is intended to regulate movements of people or animals. Four long wooden bars, stacked up vertically from the bottom to a height of about 5 ft, were hooked into a pole erected on both sides of a gravel path that snakes up to the hillside to reach the hamlet. A bamboo fence of about 200 meters long is also tied to the poles from both the sides.

On the Buffalo trail

Dimasas rear buffaloes to meet their cash emergency, a kind of village ATM

Anyone going in or out in a vehicle has to first remove the bars one by one before entering the village. The pedestrians, of course, can enter the village or go out by using a bamboo ladder attached in one side of the pole. The entry point is just a few yards from the right from a metaled road that connects Purana Hajong with the National

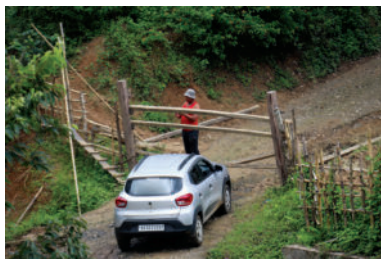
Highway and the nearby town, Maibang.

Nibosh Nunisa, a young man from the village, who was accompanying a group of 'De-school' members in a car, stopped at the gate to take out the wooden logs. The visitors, too, quickly alighted from the vehicle to help him out. The driver took the vehicle in,



GATE MANAGEMENT

During the cropping months (Mar-November), a movable gate is erected at the village entrance and special barricades at different sites around *jhum* fields are mounted to regulate movement of buffaloes. However, by December after the harvest is taken, the village gate and all the barricades are removed to allow the Buffaloes to graze all over the fields.



while the logs were being put back on the poles, and then drove them up the winding road to the village.

“We had to build the gate that way and fence the entire stretch at the entry point to stop the buffaloes from straying away from the village,” he explained apologetically. The visitors were ushered into a community hall, where they would halt for the night and lodge there for a couple of days. It was already dark by then.

In the evening, *Gaon burah* (village chief) Joypen Kemprai invited the guests to his house, where other villagers also assembled to join the conversation. The time of gathering at his resident was announced earlier on a mike. He said he was very happy for their

visit, though he regretted that the stay in the village might not be comfortable. Joypen also gave a short description about the village and its way of life. For the villagers, September is the busiest month of the year – and the harvest time of hill paddy. Every family will be working hard in the *jhum* fields to finish the paddy harvest as soon as possible, he informed.

In every way, it appears, their life is linked with *jhum*, the indigenous mode of farming on hilly slopes, which meets all kinds of their food requirements – cereals (rice, millet, maize), pulses, spices and vegetables as well as firewood. Besides farming, poultry and animal husbandry (piggery and goat rearing) have also been integrated

into the system to have some income for each household. Many families owned a herd of buffaloes, but surprisingly, no cattle were found in the village.

“Why so many buffaloes, and not cattle?” The question seemed to have amazed, or perhaps, amused the village chief. He looked up to the visitor and smiled. “We prefer buffalo,” he said nonchalantly, while tying up the ‘Long Horns’ with a rope. “It is easier to manage the buffaloes than the cattle with little or no cost on its food or upkeep,” Joypen said. Moreover, “Buffaloes can easily adapt to colder climate in the hills,” he opined.

Joypen can certainly boast of having a pair of buffaloes with the longest horns in his herd of over a

The entrance gate to Purana Hajong is removed after the harvest season ends in December





Buffalo herd of Montu johri at his house premise. Many families at Purana Hajong village keep buffaloes

dozen animals in the village. Do you have names for the two buffalos? The visitor asked again.” Everyone in the village can identify my buffaloes simply by looking at their horns,” he said. The villagers keep their respective herd of buffaloes in the open somewhere in their house courtyard. In the morning, the animals are taken to jungles outside the jhum areas and let them graze around throughout the day.



During the cropping period (between April and October), villagers set up a few obstructive structures with bamboos and small wooden logs at certain vulnerable points to stop the buffaloes from entering the jhum areas of the village.

Montu Johri also has a large herd of buffaloes. He said the villagers keep buffaloes for a particular reason, like meeting any emergency situation where money is needed. “One can take the buffaloes to the nearest markets at Maibang or Thepre,” he stated. Sometimes, traders come to the village to enquire whether anyone is willing to sell buffaloes. In December, days before the Christmas, requests for sale of Buffaloes come from neighbouring Nagaland. “They offer good price

and so, we wait for orders during the Christmas,” Montu claimed. One adult buffalo can fetch Rs 50,000-75,000 at that time.

“One of the ways of knowing the age of a buffalo is its teeth,” said a villager by the name, Deori. Prices are fixed by looking at the number of teeth - like 4,6,8 as proof of age of a buffalo; more are the teeth, higher is the price, he quipped.

Though some families use buffalo milk, it’s mainly sold for meat or for ploughing. Interestingly, slaughter of buffaloes is not allowed inside the village, but they consume the buffalo meat during the annual community festival. “We buy buffalo meat from the market,” Montu said.

Those who do paddy cultivation in the valley, they use the male buffaloes for ploughing their fields

before the sowing season starts in June-July. After the harvest of valley paddy in November-December and the hill paddy (jhum) in September is completed, all the barricades are removed to allow the buffaloes to graze in the paddy fields. The buffalo owners of the village, who have farmlands in the valley, let loose their herd in the paddy fields and leave them there for several weeks.

But how do the farmers identify their respective buffalo herd? “That’s not much of a problem,” Joypen laughed, saying, “all one needs to do is to cry out or make those familiar sounds and the herd will find their owner.” ■

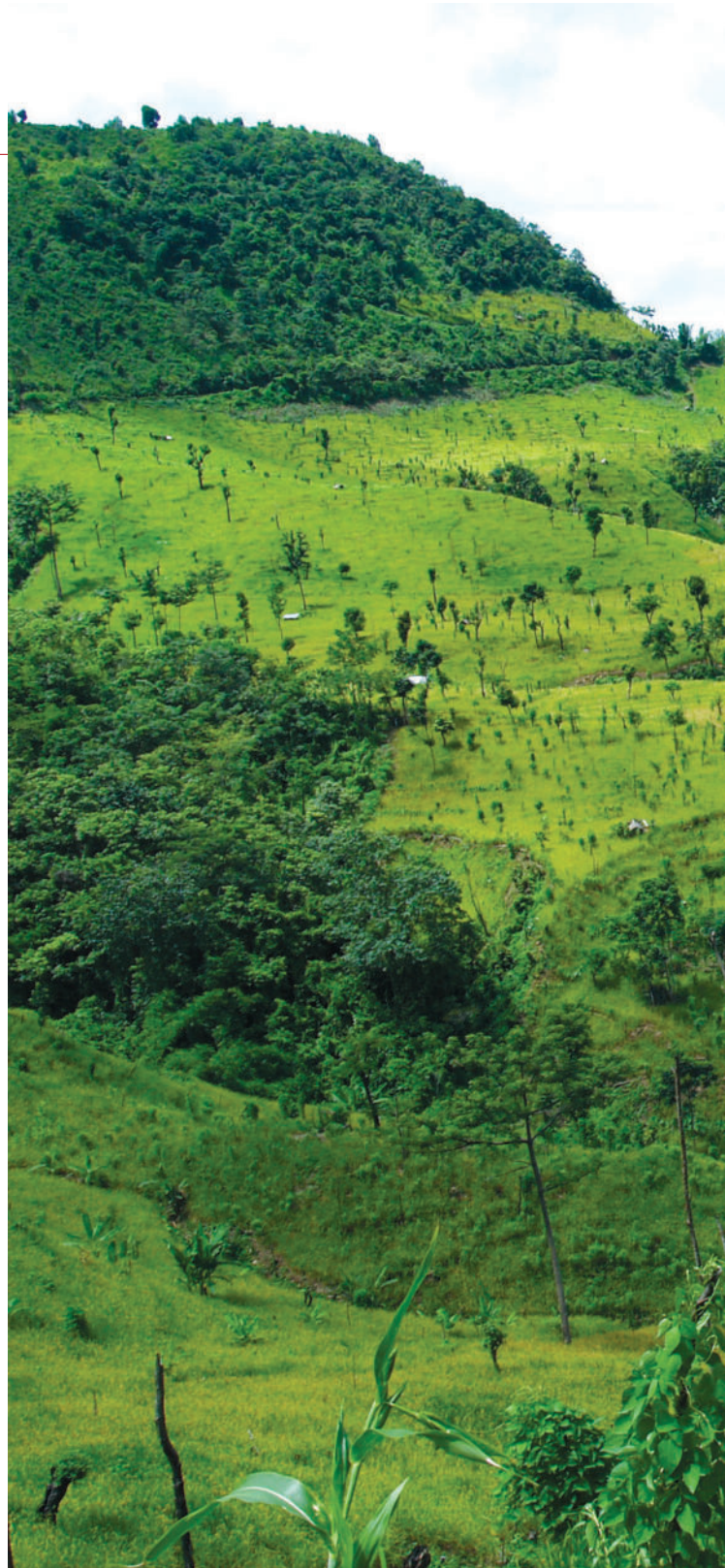
Joypen finds his buffalo herd grazing in the paddy field after the harvest in November



Jhum or shifting cultivation is an indigenous food production model adopted mostly by the upland communities of India's northeastern region. They, in their ingenious way, exploit the ecological resources of forests to maintain soil health for growing food on the hill slopes. Forests form an integral part of the farming system, which has evolved over the millennia and continues even today in the highly monetized post-industrial world. Similar practices are also found in the tropical and subtropical regions of Asia, central Africa, and Latin America.

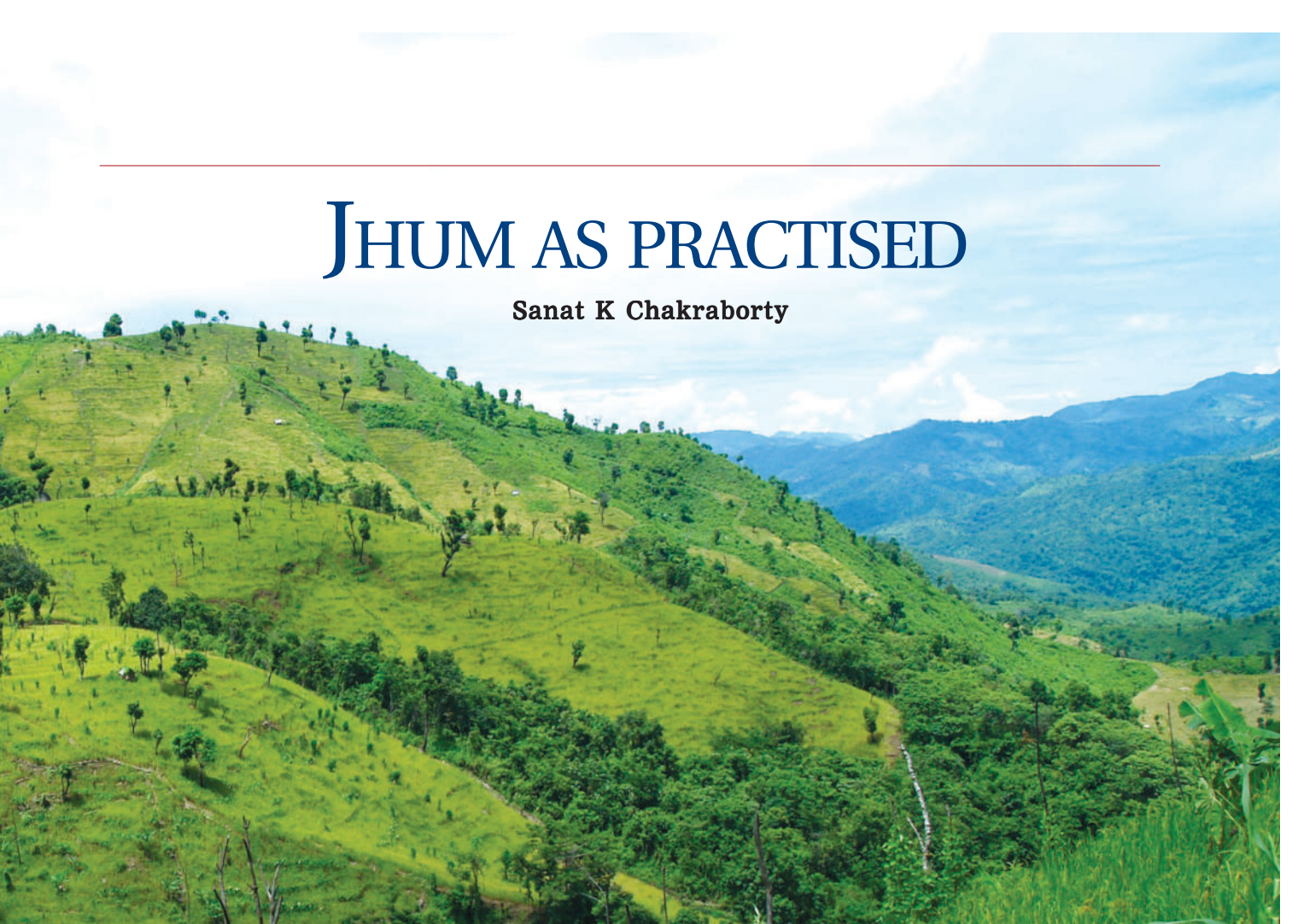
The experiential knowledge of growing food on hill slopes may have taught the upland farmers that retention of the fertile topsoil and its nurturing, including minimizing its erosion, is critical to better crop yield. Therefore, the entire jhum production and management system has been built in a way that helps minimize disturbance to topsoil and its erosion.

Crops are cultivated on a forest patch for a year or two and then it is left fallow for several years for natural regeneration and recovery of soil health. Farmers rotate their farm plots by recycling the regenerated fallow forest. In other words, jhum farming system is composed of two phases: a short period of the cropping phase (<3 years), followed by a long period (>10 years) of the fallow phase.



JHUM AS PRACTISED

Sanat K Chakraborty



The most discernible aspect of shifting cultivation is that the entire means of production is totally controlled by the farming families; they do not rely on any external support or input, such as, the supply of seeds, chemical fertilizer and pesticides. Neither do they employ any modern mechanized farm tools, instead, mostly use ancestral knowledge, simple indigenous implements, and family labour to manage the farm activities.

In short, *jhum* has all the characteristics of what is variedly described as ‘natural farming’, ‘ecological farming’, or ‘regenerative agriculture’!

Within the system on a single plot farmers produce a bouquet of crops – cereals, pulses, tubers, fruits, vegetables, spices, herbs and fruits – to meet the food and nutritional needs of their families. The surplus goes to the local markets. Thus, the per unit productivity of *jhum* system is quite high, with no input cost.

How does the process of *jhum* begin? Simply put, the whole *jhum* production activities may be broadly divided in five main sets of works, namely (i) New *jhum* site selection; (ii) fire and farm plot preparation; (iii) Sowing; (iv) Weeding; and (v) Harvesting

New *Jhum* Site Selection

The process of cultivation (the cropping phase) generally starts with a community meeting held between the months of November and December in a village. Members from each household who wish to do *jhum* are asked to enlist their names in a register. Access to land for shifting cultivation, particularly the method of choosing the new *jhum* sites varies from village to village and community to community as per their respective land tenure system, customary rules, and practices.

Once the new *jhum* sites are identified and distributed among the families, the communities, for the next two/ three months, will get busy with a host of farmland development activities - clearing the jungle and let the slashed vegetation dry on the ground. Each household will make a jungle track to reach their respective farm plots.





Jhum Fire, Slow Burning

Farmers use the technique of ‘slash and burn’ to clear the forest patch and prepare the land for sowing. A simple *dao* (machete) is employed to slash down the jungles and prune the trees. Not all trees are clear felled; these are carefully chosen for lopping and the poles are used to host climber crop plants like the beans. For weeks, all the felled tree branches and other vegetation are left in the open to dry, and later, just before the spring shower arrives in March, these are set on fire, a practice which is often derided by scientists and experts for emitting carbon into the atmosphere. But villagers have a different view on fire; it is the easiest way to remove unwanted vegetation on the farm plot and use the ashes as manures to treat soil acidity.

A host of precautionary measures are taken in the village before burning the jungle. Each household has to create a fire line around their respective plots to ensure that fire does not spread beyond the selected area. The villagers in small groups keep vigil until the fire completely dies out.





Jhum Plot Preparation

In the next few days after burning, the farmers would start preparing the farm plot for sowing, which include clearing of the land by removing unburnt vegetation and then placing crossbars across the slope to arrest erosion of soil. They will also build a small bamboo hut on each farm plot, from where they will carry out all farming activities, including cooking and resting during the whole year. If the *jhum* fields are very far from the village, some families also spent their night in their *jhum* huts. On a landscape, one can easily find out the number of families engaged in *jhum* cultivation by counting the number of huts in the field.





Sowing Season: March-April

Upland farmers plant a variety of crops in a single plot. The choice of crops varies among the shifting cultivators of various communities and is also influenced by soil and terrain conditions. However, farmers plant nearly 20 to 40 different crops – cereals, pulses, tuber crops, and vegetables. A variety of rice, millet, sorghum, job's tears, and maize are almost common among most of the upland communities in the region. Sowing is done soon after burning the dry vegetation and leveling the farm plot. Simple tools like a hoe, a dibble stick, or a *dao* are used for planting seeds.

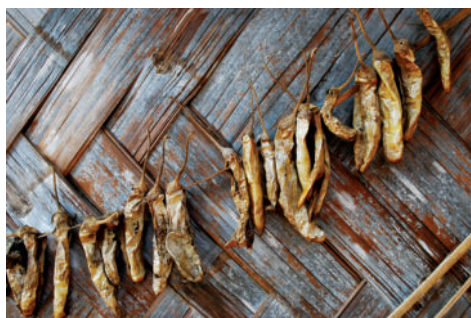




PHOTO ESSAY

JHUM FIELDS, SOURCE OF FIREWOOD

One of the post-fire activities is clearing of unburnt logs and tree branches from the new plot. Each *jhumia* household meets its annual fuel requirement from the *jhum* plot. Every day, on their way home, the villagers carry firewood in a basket and store them in a separate stockyard of each household.







Transformation of *Jhum* Field

Following the sowing, farmers wait for the spring shower to help sprouting of the seeds. Later, with the onset of the rainy season, during the months of May to July, the barren *jhum* fields will gradually turn into a mosaic of verdant food gardens.

This is a critical period for the growth of crops, which have to be nurtured carefully. Weeds around the planted crops have to be periodically removed so that more nutrients are available for the crops.





Weeding, Nurturing Crops

Periodic weeding is critical to healthy growth of plants and crops. Weeding is a tedious task and has to be done quickly. In some places, communities share their labour and join their hands in weeding one another's *jhum* plots. It is done mostly voluntarily or may be compensated with a simple meal with the neighbours.





HARVEST TIME: JULY-NOVEMBER

By July the *jhum* fields wear a festive colour and a delight to watch with a variety of crops at various stages of maturity! For the next few months, farmers would be reaping the harvest of different crops, one after another: ginger, maize, millet, vegetables, yam, and finally the *jhum* paddy. With the harvest of upland paddy in September, the cropping phase will end. Farmers may move to another plot next year or may cultivate the same plot for another year or two, depending on the carrying capacity of the soil as assessed by them, before leaving it as fallow for several years for natural regeneration of forest.





PHOTO ESSAY

Jhum Fallow Forest Phase

The fallow phase of the shifting cultivation is often misunderstood as ‘forest land’ when the cultivated forest patches return to luxuriant forests after several years of remaining fallow to be slowly nurtured by nature. The Shifting cultivators continue to derive benefit from the fallow forest as a source of various non-wood materials, mainly edible plants, leaves, roots, mushroom, herbs among other materials. The fallow forests also provide food and habitat for wild animals and birds.





PHOTO ESSAY

Traditional Knowledge: Tools & Household Implements

Indigenous upland farmers use very simple tools and implements for all house hold works - farming, irrigating, harvesting, storing and processing food and allied activities such as, poultry and animal husbandry. All materials used as farm tools and household implements, including house construction, are made of cane, bamboo, and timbers, sourced from the surrounding forest.







Jhum landscape of the Soi village at Basar in the Lepa Rada district of Arunachal Pradesh

Working on Nature's Clues

But the indigenous ecological knowledge of the Galo Communities in Siang region is fast disappearing, laments Egam Basar

Talking about shifting cultivation is delving deep into ancient wisdom of our forefathers, their culture, and transformation of their lives from food gatherer to food producer; their in-depth interaction with forest and its constituents, including unseen

spirits and deities who seemingly have disciplined, guided and blessed them. It is not just a practice of cultivation of crops but an art and science of keen observation on the behavior of nature - taking cues from flowers and birds and alike, and aligning all the community activities with dynamic natural processes to secure their lives.

Galo elders would say in the months of *Dvchw* and *Aglo* (between December and mid-February) before the auspicious bird '*Chir-Pir*' starts to sing, the land has to be cleared by felling trees and bushes, then dried and burnt and ashes spread over the land to welcome the seeds of various kinds, in the possession of man handed down from generation to generations. And in the months of *Lukw* and *Lumw* (March to mid-April) the tree *Yato* will bloom and that is also the time for the land to be draped with red *Gelli* flowers from *Tagek* tree on which the benevolent *Chir-Pir* will comfort itself, singing songs in melancholy narrating its story of travels from high mountains to hills and to meandering valleys. That is the right

time to dibble the seeds, however, with certain rituals and reverence. Then in the months of **Huwvtv-Pwraa** (August-September) when the grains are deep golden in color, it is the time to harvest with pomp and gaiety. Thereafter, it is time for the family and villagers to take respites from the hard works by indulging into merry making and marriages and re-vigor oneself with gratitude to mother nature and seek blessing for the next year.

This is how the life of the Galo community was intertwined with and revolved around the cycle of shifting cultivation, and that was how its culture was born. Some people rightly say that the shifting cultivation is the way of life for the tribal people, especially those who still inhabit remote and inaccessible upland areas of the state. However, the communities living close to the urban areas, which are now connected with roads, drinking water and electricity, and have access to other basic modern amenities, are gradually adopting new ways of economic activities to raise family income and improve the quality of their lives.

Basar, the administrative headquarters of the Lepa Rada district, which is located in the central part of Arunachal Pradesh, is one of the areas witnessing such a change. It has a population of about 14,000, who are predominantly a farming rural community. The main occupation of the people is paddy cultivation in the uplands and low lands; the shifting cultivation is practiced in the hills, but people have taken up settled wetland rice cultivation (WRC), supported by irrigation facilities, in low lying plains and valleys. As topography is mostly hilly terrains, the shifting cultivation had been the mainstay in the olden days, covering approximately about 700-900

hectares. However, with the advent of modern time and availability of alternative sources of livelihood in the private sector and government services, its practice is gradually dwindling to around 100-200 hectares. However, wetland rice cultivation is also reducing for the want of labors and irrigation facilities.

Jhum - The old way

Shifting cultivation is locally called 'Jhum kheti' and is practiced on hill slopes with forest vegetation aged between 10-15 years. The green cover is slashed usually during the months of Dec-January, burnt in March and sowing is done in the first week of April. This is

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called 'Rignv' or main cultivation where late variety of Paddy known as 'Baahv' is grown and harvested in the months of September-October.

Another practice is known as 'Docho' mainly for growing the early varieties of paddy and maize. Here cultivation is done a little earlier; the forest clearance is done in November and the final preparation like burning and spreading of ashes is done in February end. Paddy varieties - **Kimin** and **Yamuk** - are sown in the first week of March and

harvested in August. However, **Docho** is usually done in a small area. If farmers want to grow another round of maize, he can immediately sow after harvest of paddy which is known as '**Pvtvn**', and it is harvested in November-December. If the land is fertile enough to sustain crops for another year, weeding is done and seeds are sown as per the schedule in March/April. This is known as '**Rugaa**' or repeat cultivation.

Another practice of shifting cultivation is purely for growing of maize, which is known as '**Pulvk**'. Seeds are sown in February month and harvested in August month.

Farmers usually grow a number of crops along with paddy. It usually consists of vegetables, spices and tubers for home consumption as well as for sale in the local markets. It fetches them cash which is used for meeting other necessities of the family. These multiple crops are grown alongside paddy, in bunds and along pathways, and on the fences and poles erected for the purpose.

While other crops are grown mainly as vegetables and cash crops, millet is grown especially for making local wine. Two types of finger millets- known as **Meetv** and **Meepok**- are grown for making wine. The wine made out from **meepok** has a sweet taste, unlike the one made of **meetv**.

Changing time, new practice:

These days, a new trend of shifting cultivation is emerging in the Basar area for several factors. Firstly, for the majority, jhum cultivation is no longer a sole livelihood occupation as there are various sources of income for sustenance of a family, mostly petty contractual jobs in the government and private establishments. With new consumer-based lifestyle even in rural areas, requirement of cash

has overwhelmed the need for grain production. Hence, the practice of shifting cultivation is more oriented towards growing annual cash crops. Instead of paddy, people are growing more of vegetables to be sold in local markets, which are fetching much higher income than rice production. Hence, all kinds of traditional and modern vegetables, tubers and spices are grown.

Secondly, there is now dearth of labors to do the cultivation. The older folks who had been ardent on shifting cultivation are no more, and the new generation is least interested in the old practice of highdrudgery. Hence, the area of cultivation has become smaller, just enough to grow vegetable and spices crops for local sale. The average size per holding now could be hardly half or an acre of area in contrast to about 1-3 hectares used in the traditional practice years ago.

Finally, firewood is an essential item in the life of our people as fireplace is an important part even in modern houses and it is necessary to light fireplace every evening. From marriage to social events, burning of woods is an essential part of the cultural life. Firewood business is also picking up with increasing prices per truck. Hence, nowadays, shifting cultivation is also continued principally to get firewood for profit.

Jhum & Forest Ecosystems

There is no denying the fact that the shifting cultivation is mainly responsible for the depletion of primary and old standing forest, which then severely impairs its ability to perform its ecological functions such as, augmentation of water supply and maintaining the water cycle in the area. The latest State Forest Report 2021 attributed

the loss of 257 sq.km of primary forest to the shifting cultivation. Such destruction of old standing forest in the catchment area is a matter of grave concern. Besides that, the practice also involves largescale slashing and burning of forest vegetation, which releases carbon into atmosphere, and thus, contributes to global warming.

Besides, as observed, the shifting cultivation adversely affects the ecological process of water augmentation, and resulting in drying up of natural springs and other sources of water. Earlier,

Nowadays, local people practice shifting cultivation mainly for vegetables and firewoods to earn cash...Vegetables production in the jhum fields has turned out to be the chief source of family income

when the population was smaller, the pressures on the forest were also lesser, and the cultivations were confined mostly to the foothills which did not disturb the water sources located at upper reaches of the slope. However, with increase in population, the requirement of firewood, and other needs also shot up. In order to cope with the situation, people extended the jhum fields to the upper reaches of the catchment areas, leading to further depletion of natural forest there. Over a period of time, such

area dries up causing water crisis for the dependent village. The Soi village was a classic example of such shifting cultivation-induced problem of water scarcity. (See EB-Nature Project in page...). As per a recent survey by the Public Health Engineering Department, Arunachal Pradesh, as many as 734 habitations have been found to be severely water-stressed due to the prevalence of shifting cultivation in the upper catchment areas.

However, shifting cultivation has many merits over the settled agriculture and commercial plantations, which can be categorized into following:

Jhum & Crop diversity

In the settled wet rice cultivation (WRC), only paddy is grown, while in the shifting cultivation, several other crops are also grown along with paddy such as, maize, millet, chilly, brinjal, cucumber, melon, ginger, beans, peas, colocasia, dioscorea, tapioca, gourd, pumpkin, leafy vegetables, sweet potatoes, and many other tuberous crops available to the farmers, are grown.

It is a fact that the shifting cultivation is very essential for conservation of many traditional crop varieties. Many of our traditional crop varieties have been lost due to gradual decline in shifting cultivation. A variety of gourd called **Pumpa** used for storing local wine is now extinct from the Basar area. Similarly, some millet and paddy varieties have also been reportedly no more found in the area. A variety of green leafy vegetable called **Giyi** is also becoming rare.

With entry of High Yielding Varieties (HYV) meant for increasing productivity and income, many traditional crops having more medicinal values are slowly being phased out. For

example, a fibreless ginger HYV known as *Nadia* is replacing a popular indigenous variety known as *Khekir* in pursuit of higher profit.

Nowadays, local people practice shifting cultivation mainly for vegetables and fire woods to earn cash. While the WRC gives only rice for home consumption, numerous jhum produce fetch the family necessary cash for meeting other household daily needs, such as, salt, sugar, cooking oils, soaps, clothing, and utensils, and also for educating the children. Even rice requirement for the family is bought with the income from the sale of vegetable and spices crops as they bring returns multiple times higher than the monoculture crops.

Women empowerment:

Vegetables production in the jhum fields has turned out to be the chief source of family income. Women have taken the centerstage in collection of vegetables and their sales in the market. In the process, they have become the main cash earner for the family, and a provider for their unemployed husbands. Earlier, women used to fetch firewood for the households, but now in the new trend, it is becoming the responsibility of men to manage firewood business, while women are engaged in collecting and selling vegetables.

Bio-diversity conservation:

Shifting cultivation has a very important role to play in bio-diversity conservation in the context of emerging modern commercial cultivations in the hills. We have observed that the depletion of natural green cover caused by the shifting cultivation is only for a year or two or maximum three years. Thereafter, nature takes over and forest re-generates itself for 10-15 years until the next



Jhum-cycle begins. The composition of plant species in regenerating Jhum forest is almost the same as in all Jhum cycles. Starting from mainly herbs and shrubs in initial stages, gradually tree species dominate the fallow as the year increases. There is a slow phasing out of herbs, shrubs and some tree species as the forests turn to older growths, which means that the shifting cultivation is necessary for certain species to thrive.

It was also observed that different species of animals and

birds thrive according to the age of Jhum fallow. Birds of smaller kind, solitary or those that flock in groups prefer to live in young Jhum fallows and are not seen in the forest of old growth. These include some sunbird and babbler species, which have certain relationship with fruits or insects that are found in certain type of plants thriving in young forest. Some trees, locally known as *Yaywk* and *Enchi*, start to bear fruits within five to seven years of Jhum fallow, and many birds feed upon them. However, such plants

die in 10 to 20 years when *Castanopsis*, *Quercus*, *Canarium*, *Phoebe*, *Spondias* and other dominant tree species take over the forest as it ages. Correspondingly, birds feeding on such plants are seldom seen in old forest, which is frequented by migratory birds for their seasonal fruits.

We have also noticed that animals like, barking deer are very fond of young *Jhum* fallows as certain fern species grow in the first and second year of the growth. The bushes in young *Jhum* fallow seem to offer a hiding place and comfort to deer. As the forest becomes older, wild boar and other animals start to visit the place.

Certain wasp species, locally known as **Relw** and **Rechup** make their hives under canopy of very young fallows of one to few years old. These species are not usually found in the older fallow forest, while bigger wasps known as **Itu** and **Idum** are found making their hives in big tree trunks.

The bottom-line is that shifting cultivation seems to be providing congenial micro-climate and many species of plants and animals including birds seem to have developed adaptive mechanism with different stages of *jhum* fallow periods for their survival.

Primary forest conservation:

Even in terms of conservation of primary forests, the shifting cultivation is much more advantageous than the commercial plantation in horticulture and other monoculture forestry. The fact is that in the shifting cultivation, a forest is never lost permanently. Forest always gets regenerated in 10-15 years, and then are felled to be regenerated again. This is a cycle in which there is maintenance of bio-diversity and natural occurrence of plant species as per the micro-climate offered at

different stages of *Jhum* fallow. In other words, in terms of secondary and young forest regeneration, the shifting cultivation may be seen playing a positively contributing role in comparison to commercial horticulture and other monoculture plantations. Whereas in largescale monoculture of oil palm, large cardamom, orange and other commercial plantation of rubber, tea, coffee etc., forest is lost permanently, and at the same time, causing in effect, huge loss of bio-diversity.

So, what is the trade-off?

There is a need to relook at the practice of shifting cultivation as per the new emerging situations related to climate change, bio-diversity conservation and challenges of future food security. The concept of natural farming, permaculture, organic cultivation, bio-resource-based nutraceutical productions is fast becoming the pathways for modern agriculture, which may find relevance with the practice of shifting cultivation. For example, now the government of India and the world is focusing much on millet cultivation

considering it as a super food. In our tribal agriculture, millet is cultivated relatively in larger area in the shifting cultivation only, while the government developmental agencies like agriculture and horticulture departments have been making all out attempt to do away with the shifting cultivation replacing with the terraced WRC and horticultural gardens. Now, this has become contradicting priorities which will confuse the farmers and agriculture planners as well. We have lost many millet varieties due to discontinuance of the shifting cultivation.

Bio-diversity conservation is an indispensable part of modern as well as future agriculture, which depends on genetic resources for new crop variety developments. If only monoculture of current crop varieties is promoted in modern industrial agriculture, a time may come these crops may become obsolete when unfavorable agro-climatic conditions emerge as induced by climate change. Be it pharmaceuticals or nutraceuticals, the cure of all ailments lies in known as well as unexplored plants and hence protection of plant diversity



and genetic resources becomes indispensable to prepare for any pandemic or new disease that may strike in future.

That is why we cannot lose any of our native crop varieties or their wild relatives available in the forest, which may become boon for us in future. Such analysis of the situation favours protection of the shifting cultivation in one or other way along with the technology-driven commercial agriculture to preserve the plant diversities.

The government agencies like the department of Forest and Environment are mandated with various responsibilities of forest conservation and management. At

We have lost many millet varieties due to discontinuance of the shifting cultivation

the same time, there are departments like Agriculture and Horticulture whose job is to ensure food security for the nation. The activities of these departments could be very contradictory or complementary, depending on the kind of planning and programs they make.

The shifting cultivation must be a concurrent field of concerns for all - the Forest, Agriculture, Soil and Water departments, which need to work together to find ways to address the concerns of upland farming and conservation of forest and biodiversity vis-à-vis the indigenous upland farming system. ■

Return of the lost Stream

Thanks to the indomitable spirit and guts of Dr. Egam Basar, the 'EB-Project Nature' shows how modern science can work with indigenous knowledge



Over a decade ago, when Mr. Egam Basar was posted at Basar as a young Horticulture Development Officer (HDO), he noticed that the water flow in the local streams were gradually depleting. People often complained of acute water scarcity in several villages of the surrounding areas. So, he took a tour of the place and later surveyed the catchment areas from the winter of 2008 to the summer of 2009. Mr. Basar soon found out that the volume of water in the streams was decreasing due to massive clearing of forest for shifting cultivation in the upper catchment areas for years, which led to the drying up of many natural springs that fed the streams.

The Soi village, which is located in higher elevation of about 700 m above the MSL, was the worst hit by water crisis with the receding water of the local stream, known as Bolen. This small stream was the only source of drinking water and irrigation for the paddy fields of the entire village. The scarcity of water became acute during the dry winter months, from December to April, when the water in the stream reduced to nearly a trickle. The villagers were forced to give up paddy cultivation because of the water crisis.

“I thought I had to do something to help address the water issue, especially in the Soi village,” Mr Basar said. The idea was simple, that is, to try to rejuvenate the natural springs in the upper catchment area



Shifting Cultivation in the catchment forest above the Soi village led to drying of natural springs

and gradually recreate the lost forest over the years. “I wanted to show to the villagers how easily the water problem could be solved with their cooperation and support,” he said. Thus, he initiated a pilot project at the Soi village, which was found to be the most vulnerable among other hamlets.

Initially, he approached the local government officers and the ICAR scientists who were posted there and discussed his ideas with them. In 2009, a small team under the aegis of Environment Protection Group (EPG) was set up to launch the pilot. But soon some of the members began to express doubt about the feasibility of the proposed plan as designed by Mr. Basar and opted out of the project. It was based on the principle of spring shed recharging techniques by digging rainwater harvesting pits across the hill slopes along the

natural drainage lines – a simple concept which was quite new at that time there.

However, he was totally convinced of his idea and decided to take it up as a personal mission to implement the work plans. He used a part of his salary to fund the pilot project under a new project title named after his name – ‘EB Project Nature’. It took over a year to kick start the work plans. Since it was a personal project, Mr. Basar had to deal with several issues, especially, regulation of the shifting cultivation in the upper catchment areas, which was critical to the revival of the spring sheds, the principal objective of the project.

The issues at Soi were quite complex! Soi is a small village of 45 families with a few of them, may be five to ten households, involved in shifting cultivation. But the problem of Soi village lied

elsewhere. The shifting cultivation was done in the upper catchment by the neighbouring Pagi village, which owns the upper catchment areas of the Soi village. Therefore, Pagi village is not concerned whether or not shifting cultivation is affecting the source of natural springs, the lifeline of the Soi village. In the catchment area, if the shifting cultivation was continued for a long time, after every 10-15 years, then it would be very difficult to reforest the area and maintain the water cycle, including augmentation of water. This was what happened at the Soi village.

Therefore, in order to protect the catchment areas, “I had to acquire these degraded forest lands at the catchment from the owners of the Pagi village in exchange of my lands in the nearby town for the sake of implementing my project. I just wanted to create a model there so

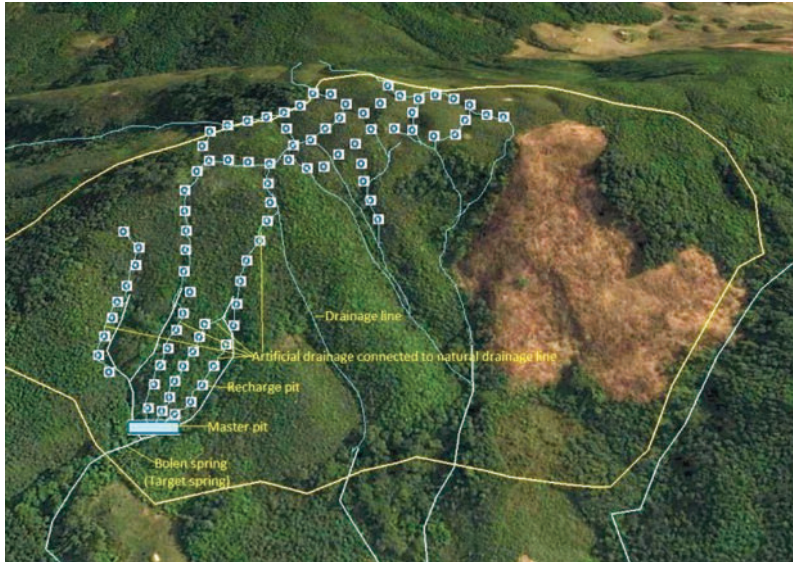
that it could be replicated elsewhere,” Mr. Basar claimed.

Eventually, works on the ground began in 2011 with a target of digging at least 1000 recharge pits, each of which could retain about two cubic meters of water. The youths of Soi and the adjoining villages were involved in the works on payment basis. But the progress on pit construction works was very slow due to paucity of funds, and by the end of 2017, only about 250 recharge pits could be dug. That was not a mean achievement! Following the last seven monsoon years, the villagers reported that they observed presence of water everywhere, including in the local streams with the rejuvenation of natural springs and retention of rainwater in hundreds of recharge pits. The flowing water in the stream throughout the year not only solved the problem of drinking water supply in the village, it also opened up other possibilities. The villagers resumed wet rice cultivation due to the availability of water for irrigation. And by 2020, some of the youths even took up fishery in the area with the help of some kind donors.

Apart from water conservation, the EB-Project Nature also focused on forest and bio-diversity conservation. Under the project, more than 100 ha forest has been conserved, including three sacred groves. The Bolen spring shed has now about seven hectares of core medium dense forest and 60 ha of overall forest area. The area which was once denuded of forest is now home to various wild animals and birds including endangered Pangolin. The project has so far conserved over 70 species of rare and endangered orchids, more than 30 species of rare and endangered medicinal and timber plants, besides hundreds of other native flora.



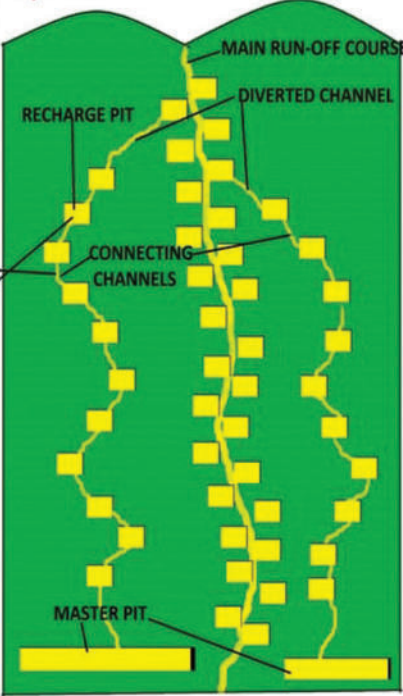
Dr. Egam Basar -photo EB Project



EB-Project Nature Water conservation

SPRING REJUVENATION PLAN IN HILL AND SLOPY AREAS (THROUGH RAINWATER HARVESTING AND RECHARGE)

Recharge Pit size
 Length : 2 -8 m (on availability of plain area)
 breadth: 1-4 m (one availability of plain area)
 Depth : 1 m



SIZE OF MASTER PIT : Any size depending on availability of space with depth 1.5 to 2 m. Master pit should be well protected.



Forest conservation and Eco-tourism Project at Soi village - an EB Project Nature Initiative

Along with protection and conservation of forest and biodiversity, it was also necessary to address the issues of livelihood for the local communities, especially those who were solely dependent on the shifting cultivation. Therefore, in order to wean away the villagers from shifting cultivation and denudation of forest, the project encouraged village youths and womenfolk to take up income generating activities, such as horticulture gardening. “We provided them with low-cost polyhouses where they could grow ‘King Chilly’, which had good demand”, Mr Basar said.

Looking at its prospect, the project was in the process of making Soi as a King Chilly village with “one village one product” theme. Besides, through its spring shed rejuvenation, forest and biodiversity conservation model,

The EB-Project Nature has become a center of tourist attraction. Many domestic and foreign tourists now come to see the spring shed forest and the conservation model

the project has introduced Eco-tourism in the village. It has also created an ‘Orchid Park’ in the spring shed forest, which has become a center of tourist attraction. Many domestic and foreign tourists now come to see the spring shed forest and the conservation model. All these

tourism activities are also providing livelihood opportunities for the local youth.

The project has also become the learning center for PhD students, Scientists and villagers from other districts. Various government departments like the Public Health Engineering, state Jal Jeevan Mission, Water Resource and Soil and Water conservation are sending their staff members for exposure visits and training on spring shed management to the project site. Recently, the Task Force panel on Jal Jeevan Mission has recog-nized the EB Project Nature as one of the best practices in the country and was conferred the ‘Jal Prahari’ national Award in 2022.

“We are now striving to develop it as a ‘sustainable mountain village model’, even if it may take a long time,” Mr Basar opined. ■



My tryst with ‘Ka Rep Shyrtie’

Shifting cultivation or *jhum* cultivation, or *Ka Rep Shyrtie* as we call it in Khasi, has always been an integral part of my family’s life, holding a special place in my heart. As a person who comes from a community that still practices shifting cultivation, I have witnessed first hand the significance of this ancient farming technique. *Jhum* cultivation goes beyond being a mere farming practice; it is deeply rooted in our culture and way of life.

I was born and brought up in Nongtraw village, located in

By Pius Ranee

Khatarshnong-Laitkroh, Sohra subdivision of the East Khasi Hills District in Meghalaya, India. The village is situated 43 kms away from Shillong, the state capital. It lies along the mid-slope of a deep gorge and one has to climb down a long, steep flight of around 3000 steps to reach the village. Nongtraw has a population of 250 persons residing in 40 households, and all the families engage in shifting cultivation. Almost all the

neighbouring villages such as Dewlieh, Tyniar, Diengsong, Mawtuli, Nohshut, Wahsohra, Mawthawtieng, War War, Kshaid, and Khrang, also largely depend on *jhum*.

The villagers grow in a single plot more than 30 varieties of crops, including potato (*phan*), yam (*shriew*), sweet potato (*phan karo*), job’s tears (*Sohriew*), maize (*riewhadem*), beans (*rymbai ja*), *sohkhia* (cucumber), millets, and green leafy vegetables like *jaiing*, mustard leaf (*tyrso*), *jyllang*, and many more. The crops that grow

during the fallow cycle period also become an important source of food. Additionally, we have a number of wild edible plants, including *jarai*, *jail*, *jakhria*, *la nub*, *pashorkait*, *tyrkhangiong*, *sohshiah*, *sohpong*, and many more.

For us, shifting cultivation is a profound connection with nature. It is a way of learning from the environment and understanding its intricacies. Nature becomes our teacher, imparting knowledge about weather patterns, climate variations, diverse plant and animal species, and even the health of our soil. By engaging in shifting cultivation, we remain in harmony with nature, respecting its wisdom and relying on its guidance.

Moreover, shifting cultivation allows us to preserve our tradition of sharing and caring within the community. Tribal people like us uphold the value of the common good and the well-being of all. Seed-sharing practices, such as “*Kylliangsngi*” “*ka bara sngi*” and “*nahkuruilok*,” are shining examples of this communal spirit. Farmers selflessly donate a day’s labor to assist their fellow farmers during critical farming activities like sowing, planting, weeding, and harvesting. This collective effort not only fosters a sense of unity but also ensures the success of each farmer’s crops.

In addition to these shared practices, there are other unique customs associated with shifting cultivation. For instance, the War Jaintia people have a tradition called ‘*Longhai*,’ which farmers practice while removing weeds from *jhum* areas. People come together, dedicating a day of work to help their fellow farmers clear their fields. What makes this

tradition truly exceptional is the singing or chanting of specific songs that are exclusively associated with *Longhai*. These customs not only strengthen social bonds but also preserve our cultural heritage.

Engaging in *jhum* cultivation also allows us to develop a deep connection with nature at a profound level. The earthy smell of the soil, the touch of our bare feet and hands, and the scent of burned vegetation evoke a sense of solace and comfort that other farming practices cannot provide. It is a reminder of our roots, a reminder

Tribal people like us uphold the value of the common good and the well-being of all. Seed-sharing practices, such as ‘Kylliangsngi’ ‘ka bara sngi’ and ‘nahkuruilok,’ are shining examples of this communal spirit

of the simplicity and beauty that nature offers.

From a traditional standpoint, our elders have imparted valuable knowledge regarding the benefits of shifting cultivation. They explain how this practice helps prevent the extinction of certain tree species. By observing the forest before it is burned and witnessing its regeneration during the fallow period, they can assess its health. The fallow areas also serve as storehouses for medicinal herbs and provide a habitat for

pollinators, thanks to the growth of flowering plants. Our elders emphasize the importance of certain flowers, such as those of the ‘*kdait*’ plant, which help bees produce the finest quality honey.

Despite the allure of city life and the conveniences it offers, I made a conscious decision to return to my village and live amidst the practice of shifting cultivation. It was not an easy choice, considering the potential challenges it posed for my children’s future and my daily commute. However, I recognized that if my kids grew up in the city, they would lose their connection with nature and the invaluable knowledge passed down through generations. Therefore, for the sake of preserving our culture, our traditions, and our bond with nature, I took the leap and chose to reside in the village.

The potential consequences of losing shifting cultivation are alarming. Crop diversity, which is essential for ensuring resilience and adaptation to changing climates, would be greatly compromised. Numerous wild plants, with medicinal and nutritional value, as well as cultivated crop varieties, thrive in shifting production systems. As many as 100 wild plants (for medicine and food) and around 50 cultivated crop varieties of tubers, vegetables, and grains were documented in the shifting production system (Bernhart, 2015). By abandoning shifting cultivation, we risk losing not only these valuable plants but also the seeds that carry the potential for future food security.

Furthermore, shifting cultivation acts as a safety net, ensuring food security for the farmers and their communities. During the recent COVID-19 pandemic and

subsequent lockdowns, the self-reliance of shifting cultivators became evident. Their fields and forests provided them with all the necessary food, shielding them from the vulnerabilities experienced in other areas. In June 2021, the North East Society for Agroecology Support (NESFAS), in collaboration with UN-FAO, conducted a survey to assess household food security in 18 villages in Meghalaya and Nagaland. These villages were identified for their total dependence on the shifting cultivation.

The purpose of the study was to determine the impact of COVID-19 on the food security of the people residing in these villages. The findings revealed that globally, the prevalence of moderate or severe food insecurity was 30.38 percent, while in Asia, it was 25.83 percent. However, in Meghalaya and Nagaland, the prevalence was significantly lower, standing at only 11.30 percent. The resilience demonstrated by these communities highlights the importance of shifting cultivation in securing food sovereignty.

The language and vocabulary associated with shifting cultivation would also disappear if the practice were to vanish. Our cultural identity is deeply intertwined with this way of life, as demonstrated by customs like *Longhai*. Losing these folk expressions would be a tragic loss, eroding the richness of our heritage.

Additionally, shifting cultivation ensures that our food remains uncontaminated by chemical fertilizers and pesticides. The absence of these harmful substances guarantees clean and organic produce, preserving the natural taste and aroma of our food. Shifting cultivators take pride in their produce, viewing it not merely as a



Jhum farmers of dewlieh village - photo courtesy, NESFAS

commercial commodity, but as a product of nature and the cultural legacy that accompanies the practice.

The villagers I talked to said, “shifting cultivation is the only farming system that allows us to breathe clean air, get access to clean food, and also a place where we can connect with our neighbors and family members” (Richard Ranee, custodian farmer). Another farmer, Kong Bibiana Ranee, a custodian farmer, added, “Whenever I am in trouble, shifting cultivation is like my mother whom I can solely depend upon.”

The erosion of shifting cultivation would result in the loss of indigenous knowledge, which forms an integral part of our cultivation and traditional value system. This knowledge encompasses the sustainable use of natural resources, understanding the ecosystem, and maintaining a

harmonious relationship with the land. If we disregard and undervalue this wisdom, we risk severing our connection with our ancestral wisdom and the teachings of nature itself.

Therefore, shifting cultivation is more than just a farming practice; it is a culture deeply intertwined with nature, community, and our way of life. It serves as a repository of traditional knowledge, promotes sustainable land use, ensures food security, and preserves our cultural heritage. Losing shifting cultivation would have far-reaching consequences, impacting crop diversity, food security, language, culture, and indigenous wisdom. Therefore, it is vital that we recognize and value the sustainability and resilience that shifting cultivation offers, supporting its continuation for the benefit of present and future generations. ■

‘Oh, We Love Lo Vegetables, It’s all Organic!’

*But no one seems to care to know where they come from, who produce these, and how, says **Linda Chhakchhuak***

Welcome to Tuahzawl! Perched on a steep terrain, about 57 km northwest of Aizawl, the capital city of Mizoram, this village produces fresh seasonal vegetables, which find their way to urban homes. The city dwellers always look for vegetables grown in the *jhum* fields, where chemicals are rarely used for growing food crops and vegetables. Tuahzawl is one of those villages in the Mamit district of northwestern Mizoram.

Lalrinliana, Rina for short, and his wife, Biakmawii – both in their

early 60s – are the third generation *jhum* cultivators. “I’ve been doing *jhum* for the last 30 years now; my parents did it in their whole life, and so did their parents, following their ancestors, who passed on the knowledge of farming and nourishing the land to us,” said Lalrinliana. “For us that is the only way we earn our living.”

Weather was unusual at this time by the end of August,” Biakmawii told this writer, as she was getting ready to go to her *jhum* field, which is about two kilometers or so from the village. It was raining

intermittently almost throughout the day. These are the busy days for the couple, as it is the time for weeding as well as harvesting of all kinds of green vegetables from the *jhum* field.

Her field showed a variety of vegetables, including maize and rice. She named some of the vegetables, while showing them in the field such as, *Mai* (pumkin of several varieties), *Tampui* (an indigenous variety of mustard family), *Fanghma* (cucumber), *Kauphek*, *Tamphek*, (varieties of mustard), *Berul* (snake beans) *Bepuithlanei* (winged beans), *Bawkbawn* (brinjal with different varieties) *Bawrsaibe* (lady’s fingers), *Chhawhchi* (sesame in four different varieties), *Bete*, (a type of bean) *Bekang* (soya bean), sweet potatoes, varieties of yam and Colocasia, bitter gourd, ash gourd, water melon and assorted varieties of melons, *phuihnam* (East Indian





Glory bower), ginger, garlic, chillies, including the Birds eye chilly, which has recently received Geographical Indication (GI) certification, and a bunch of herbs like, local varieties of basil, hibiscus, dhanian, mint etc.

As for rice, Biakmawii has planted a variety of sticky rice, locally called *Buhban* in her field. The *jhum* paddy will be ready for harvest in September. She said Mizo farmers had bred, conserved and protected a number of native varieties of paddy for upland *jhum*, many of which were named after some successful *jhum* farmers, or certain areas, where these varieties were grown in the past. These are known as *Patea*, *Kawlhawk*, *Relbawm*, *Traichi* under which there are other varieties such as *Chhirthlak*, *Thlanchhuak*, *Farel*, *Bawngbuh*, *Kawlziki* to name a few. Some of these varieties are still preferred by the highland farmers.

Over the years, *jhum* farmers have changed their choices of crops and vegetables. Earlier, they used to grow mainly rice for the family

to survive through the year. Crops are much diverse now. This year Rina and Biakmawii have a *jhum* plot where one finds paddy as well as all kinds of vegetables growing together in a medley of plants.

The vegetables are grown both for consumption and for sale in the local markets in Aizawl, where people depend on the *jhum* produce of the farmers like Rina in the villages surrounding the state capital.

But do they earn enough from *jhum* to meet all their needs? Rina said they made a fair living out *jhum* cultivation. Most of the village folk could build their houses, Assam type *pukka* houses, send their kids to schools and colleges in Aizawl and even further out.

However, the usual refrain is that *jhum* cultivation is 'not profitable' and *jhum* cultivators are an impoverished lot, as the practice is no longer viable due to rise in population, reduction of farm lands and the shortening of the *jhum* cycle. Pu Rina refuted all this saying that he and his neighbours were

doing quite all right. "Here we are doing fine. Of course, it is tough work, but if people are willing to work, it will look after you. The harder we work the more we get from the *jhum* fields. The less we work, the lesser is there to harvest", he said.

He claimed that *jhum* cultivators could not go wrong if the markets were stable and they were allowed to get the fair price for their products. While vegetables are grown both for personal consumption with the surplus for sale, there are certain *jhum* cash crops like ginger, which gives them good extra income if the market price is good.

Ginger is the barometer for the hill farmers. There are times when the wholesale price falls down to Rs.10 per kg. Last year, the market was very bad. But this year, people hope that it will go up. "If it does, it will be good for us because most of the cultivators in these hills have ginger to harvest", Rina said, adding that if they get even Rs.50 per kg, it is a good rate.

Unfortunately, those traders in the city make most of the money, instead of the farmers or the village collectors.

When asked if *jhum* could provide all the basic needs of the families, why did the government want them to stop *jhum*? Not only that, government officials and experts say that *jhum* is harmful for environment, as this slash and burn farming system degrades soil fertility, destroys forest, and causes air pollution but produces very little.

"That's not true," Rina rubbished all this. According to him, the urban elite only want to enslave the rural people by strangling their only means of earning, an honest livelihood which is *jhum* cultivation. Even the All Mizoram Farmers' Union (AMFU), which is

supposed to look after the interest and welfare of farmers in the state, does not seem to appreciate the *jhum* farming system; they often toe the official line and prod the *jhum* farmers to adopt, what they claim, more sustainable settled cultivation.

Rina said he had been doing *jhum* cultivation for more than 30 years and so did his ancestors, who not only survived but also brought up several generations. He has his own lands, which is large enough for him to rotate the *jhum* plots, while maintaining the required fallow cycle of the bamboo forest. He has also given a plot to a woman from the village, Tluangi, to do her *jhum* and another plot on the other side to 70-year-old Ringa. Rina said Ringa wanted to do *jhum* so that he could get fresh vegetables, maize and herbs for his own consumption.

Many do *jhum* also because of the fact that they will not need to spend money on buying vegetables, which are costly in the market place.

Defending the ancestral farming system, Rina argued that *jhum* was particularly useful for managing the natural bamboo forest. “We don’t do *jhum* in deep woods, unlike other hill states. It’s bamboo everywhere, we do *jhum* in bamboo forest,” he said, adding, *jhum* helps faster growth of bamboo forest.

If these bamboo forests are not periodically cut down and fired, the clumps will multiply and eventually, the bamboo will dry up and die out,” he said, explaining the processes that go into understanding the age-old practice.

Experts from outside tell us that we should not do *jhum* cultivation because it entails cutting the bamboo forests and burning, which they say will lead to deforestation and soil erosion. But we have come to know from our experience that this is the only way that the bamboo forests get revived. New forests grow in the fallows when we leave them for another plot,” he claimed. But the experts and government

officials do not really seem to see and understand that, he rued.

Our practice regenerates forests. Not only that, when the ashes of the burnt bamboo cools down, it becomes the most fertile soil for our crops. We don’t need any chemical fertilizers. Our crops grow on this natural fertilizer from the bamboo ashes. The next year we go for another spot leaving it for natural regeneration. In three years, the bamboo forests grow back and it is ready for us to *jhum* again,” he said. During the fallow period a new bamboo forest comes up. It is in these new forests that all kind of bamboo shoots are found. “The fresh bamboo forests in fallow lands give out a huge supply of bamboo shoots and eventually they grow into forests in a short time, and in three-four years, it is ready for cutting and firing,” he said. The bamboo shoots are consumed and also a source of income as it is a sought-after item in the market.

Rina believes, “bamboo forests were created by God to ensure that

Harvest time in *jhum* fields



the people in the hills have a way of earning their livelihood.”

If we don't cut and burn the bamboo forests it will not grow but rot,” he said. Because of this nature of bamboo forests, he believes, bamboo forests is God's gift to them. Bamboo forests are forever. This regeneration goes on and this cycle is the perfect for *jhum* cultivators.

Moreover, the *jhum* farmers have certain methods of cutting the bamboos, ensuring that they fall to the ground in a certain way which help dry the slashed bamboos better and burn thoroughly. If they don't burn properly, the harvest will be affected, he said.

He has also pointed out that tree forests need a longer time to regenerate, but in most parts of Mizoram, it is bamboo which is the forest. People do not touch the tree forests, which are safeguarded as village supply forests and safety forests. Every village upholds this age-old tradition.

Rina also contested the allegation that *jhum* cultivation creates air pollution because they burn the *jhum* forest for their cultivation. “But we do it once a year for a short while, whereas the city people burn oil day and night without let up for their vehicles and other machines. On this they have nothing to say,” he countered.

Lottery system for new *jhum* plot

In many ways, the *Lo (jhum)* system of cultivation and land management practices in Mizoram is quite different from other upland areas of the northeastern region. Many farmers in rural areas own lands, which they use for *jhum* cultivation. At Tuahzawl also

some people like Rina have their own land. Those who do not have, depend on the Village Council (VC) lands or village commons. Every year, the Village Council asks people in the village to register their names, who intend to do *jhum*. Around the end of the year or early in the year, the VC will hold a lottery through which people are allowed to choose their plots, which are already marked out by the Council in an area found suitable for *jhum*. This plot allotment system is called ‘*Ram Theh*’. The plots are divided as per the number of people who have

Baibing is a particular vegetable of the yam family, which springs up after the firing is done in the fields along with different types of mushrooms, which are only found in the vicinity of the *jhum* plots

registered earlier. On a set day, the registered persons will take part in the lottery in public. It is a simple system of numbered slips of paper which they have to pull out. Depending on the number he or she pulls, the person will get to choose the plots. Everyone hopes to get the first serial numbers so that they can choose before others. This system is considered fair and square as none can take advantage of his or her position in the village to choose the best plot.

The first choice is, however, reserved for the *Tlangau* if he wants

to do *jhum*. The *Tlangau* is the town crier or rather the village crier, a traditional post. The *Tlangau's* job is to go around the village and shout out the decisions of the Village Council. The traditional post is still very relevant today and has not withered away despite the modern day means of communication and plethora of mobile phone networks.

Lawm System'

Another unique aspect of *Lo* cultivation is the practice of mutual labour-sharing, locally known as ‘*Lawm* system’. In the olden days, the Mizos had this community service, through which two persons could set up a working partnership wherein they would help and support each other in the *jhum* works. Basically, it is a bond of exchange of labor. Such a partnership was usually between neighbors, relatives and good friends. This was also more necessary because those days the jungles were thick with wild animals and it was dangerous for a lone person to go to the *jhum* fields, passing through these jungles.

Biakmawii said she had been able to do *jhum* successfully as a young cultivator because of the *Lawm* system. She had two ‘*lawm*’ friends who helped her in the fields in exchange of which she had to help them in their fields. “I washed their clothes, packed food for them, carried their vegetables for them and in exchange they helped me in the field, and were my guard against wild animals. Those days in the 70s the population was less and there were stretches of lonely forested areas,” she said.

She said that the ‘*lawm*’ practice is often misunderstood by the people of the new generation, who think of any male and female friendship only in terms of modern ‘boyfriend-girlfriend’ concept. *Lawm* practice is nothing like that.



Farmers at Tuahzawl grow about 20 to 30 varieties of crops on a single *jhum* plot

It is like a contract between two persons for helping each other in works in the fields such as, harvesting, weeding, planting, so that all these can be completed in time as everything depends on a day-to-day routine. If we miss even a day of weeding for example, it may harm the plants and thus the harvest”, she said. In those days there was no concept of paid labor and this was the way of life in the village under traditional customs and practices, she stated.

Biakmawii plants her own seeds which she has saved from the last harvest. These were passed down over the generations so they do not have to buy any seeds from the market. They do sometimes exchange seeds with neighbours.

Most *jhum* cultivators do not fully trust seeds handed out by the government departments, as

through experience it has been seen that they do not give proper yield or they die out as weak plants. Some like the maize seeds which were once distributed found to be not as good in taste as the indigenous varieties. The Mizo taste buds did not find them wholesome. These maize varieties were huge in size, looked good but could not match the taste of the indigenous varieties. Soon the variety died out.

She said they chose the good plants and left them to ripe and dry out. Then they picked them off the plant and dry them out in the sun or above the fire-place where all sorts of seeds are placed for some time to ensure that the moisture is removed.

Added to these are the vegetables that can be foraged in the *jhum* fields or along the nearby forested areas such as bamboo

shoots, *Chingit* (michingapatta), plantains (banana flowers) and banana stems, *Khanghu* (climbing wattle) found in the wild but now cultivated by many, and other wild offerings from nature. *Baibing* is a particular vegetable of the yam family, which springs up after the firing is done in the fields along with different types of mushrooms, which are only found in the vicinity of the *jhum* plots. *Baibing* is considered a delicacy which no Mizo will pass over. Fruits such as banana and gooseberry grow all over the place in the fields, in wild and village residential areas.

Tlanmawia, the village council vice president said, in the village council lands where *jhum* is done, “we go according to the government time table for burning the slashed dry vegetation in the new *jhum* plots, which always has to be

completed before the end of March. In the private holdings, we usually allow them to fire by January,” he said.

Majority of the 115 families in the village have their own land and can do *jhum* cultivation in their own lands. But even then, there might be some who want to do *jhum* on village commons for which we have enough. “This year we have only 18 people who came to seek village council land to do *jhum*. Most of them grow vegetables along with paddy. It is still like in the old days.” Only difference is that now even though there is enough land, people

Reserve Forest. When a resident of the village requires timber for use to build their house or for their use, the village council is authorized to permit them to cut a few trees. It is free of cost. Further, the village council had previously been very interested in conserving the Hoolok Gibbon and the *Ram Sial*; it was the Young Mizo Association (YMA) of the village, which was heading that effort.

They were the first village to take up protection of the *Ram Sial*, a semi-domesticated large Mithun (*Bos frontalis*). They had come to know that the *Ram Sial* when they

Lives of *jhumia* women of Tuahzawl

In her 70 years she has worked in the *jhum* fields since she was 15 years old. Her father had left the family leaving her to take up the family responsibilities. She loved to go to *jhum* as she could communicate with nature. Also, now she preferred to go to *jhum* fields and enjoy the quiet as she did her work. In the early years of her becoming a *jhum* farmer she and others had mostly cultivated paddy for their own consumption along with many vegetables.

“Before, when I was young, there was no such thing as a market and no buyers. Whatever we grew, we grew for ourselves. We had so much surplus, we ate a lot those days as there was so much. Nothing came from outside, not even the rice from the plains or as it is called “*Vai Buh*”. She said the entry of rice from the plains had made people lazy.

In the old days, we had lots of rice for the whole year and we had rice-store houses locally called *Buh Zem*. These were huts carefully constructed and lined with leaves where rice grains were stocked. These were located about halfway from the *jhum* fields to the residential village. After harvesting, the paddy was brought to these store huts. It was halfway with the calculation that carrying the weighty paddy right to the residence was a bit too tiring. The idea was that it was near enough the home so that they could get the paddy whenever the stock at home finished and also it could be conserved more safely from rats



Fresh *jhum* vegetables, including bamboo shoots



confine themselves to smaller plots for *jhum*. Many people just depend on government supplied rice. “Prior to the Nineties, we were self-sufficient in rice, but now we are not, even though we have enough land to do *jhum*,” he lamented.

Because of this, over the years, much less people are seeking village council land for *jhum*, while large areas of the village land have become forested and much enriched. The *jhum* cycle is about 10 years, which has given a good lease for the forests to grow back.

The village has a good portion of Village Supply Forest and Safety

crossed over to other village areas, were hunted and slaughtered for the meat. So, they had put up stiff campaign against hunters and hunting, as many people from outside the village often came to hunt in their areas which had good forests. This is still continuing. But they lost interest as there was not much appreciation from the authorities for all the efforts that they had put in. This discouraged them from their conservation and protection work.

Villagers resent that in the name of improving the rural economy and socio-economic conditions of



Lalhuni, 70

and other insects as the store stood by itself on stilts.

The women of the house brought paddy to the house, pounded out the husk and whisked off the chaff on the bamboo *thlangra* and then cooked the rice. Lalhuni said this was an everyday task every woman had to do before cooking the food, fetching the water, feeding the chickens and pigs and rushing off to the *jhum* fields. She had done her share of this then, but now they do not grow much rice as they are more inclined to grow vegetables for the market.

In her younger days, she had seen that a single man could look after a field where three tins of rice could be planted. Now, it has changed. Even if a person tends a *jhum* field for two tins of rice it is said to be a lot. From an area where

five tins of rice can be sown one can harvest 100 tins, she said.

She said it's not because there was less land. No, there is enough land if one wants to do it. It's just that most are interested in sowing vegetables. That is because it can be sold in the market. "These days we all need money, unlike in the days when I was a child. Now no one can survive without money as we have to pay bills such as, electricity, medicines, school fees and other things," she said.

People were healthier then. "I went to the *jhum* field everyday even when I was pregnant. In fact, I was still going to the field and it so happened that I had been to the *jhum* field on the day before I delivered my first child in the morning. There was no problem. Nowadays, delivery of baby is such a big problem. Most people have to undergo operation (cesarean delivery). I often wonder if this is because they want to get the baby before it's actual time of delivery," she said. I had one of my children on the 8th day of the 10th month, so those days we waited for the natural cycle," she informed.

In her *jhum* fields, besides the vegetables, she has planted sticky rice or *Buhban* as it is called. During her young days she had planted cotton, strung and spun it into thread and then woven clothes for herself and her family, as well as the thick traditional blankets. But, growing cotton was stopped sometime in mid-70s as it was much easier to depend on the cloth that came from the plains outside the state. It was cheaper and easy to wash. "Growing our own cotton and weaving them into cloth is a huge task which is very tiring," she said. ■

She has been a *jhum* cultivator ever since she was a young girl. While studying in Class IX, her father had died. Being the eldest of three siblings, the weight of responsibility of taking care of her family fell on her shoulders. She was only 17-years old then. She took over the *jhum* work and started tending the forest fields and looked after her family. After her marriage to Rina at 22 years, she continued to work in the *jhum* fields with her husband. "I never missed a day, except when I got sick, but that was seldom," she said.



Biakmawii

Even when pregnant she continued to go to work in the *jhum* fields till almost the very day of delivery. After a recuperation period of three months, she was back in the fields. "I cannot stay back home, it is a habit and I miss the fields, the jungles, plants and the sunshine and rain if I stay at home," she said. She did everything except the slashing and firing which was done with the help of her fellow village folk. But the caring for the field had to be done by herself. ■

the upland farmers, the government projects and interventions in land use and resource management have been essentially aimed at wiping out the age-old indigenous farming tradition. Instead of improving and promoting the inbuilt potentiality of self-sufficiency in the *jhum* system, the government is inadvertently pushing the rural population gradually into the traps of market-dependent economic system, which has already been proven to be quite detrimental to the rural farmers.

It has been making all-out efforts to abolish this indigenous farming practice by offering all sorts of schemes to people, but the benefits of all these have always gone only to a section of selected 'beneficiaries', and the majority of the rural families were left to fend for themselves.

For decades, the official campaign has maligned the *jhum* cultivation, which is the main source of livelihood of the mountain people and this thinking has spread across all levels of society. This has happened to such an extent that to be a *jhum* cultivator is almost a crime and looked down upon.

"We don't understand why the government officials only blame us for everything that destroys environment. They ask us all the time to stop our ancestral practice of shifting cultivation, which is the only way we know of growing food in the hills, and it's also the only source of our livelihood. Moreover, we try to follow whatever they tell us to do. We cooperate all the time. They promise so many things, but at the end, but nothing happens; promises are never kept. We suffer again and fall back on what we know the best, and our last resort - the *jhum*. It never fails us," says a farmer. ■

The Mizo codes of 'Beautiful Living'

It's a part of jhum culture and community life in the uplands

Settled on mountain tops since ancient times and living off the land in one of the toughest terrains in the world, has turned the Mizos (a generic name used to denote dozens of affiliated tribes and clans scattered across the uplands in Mizoram and spanning across adjoining hills of the other northeastern states of India, Bangladesh and Myanmar) into traditional experts on living with nature and surviving on this knowledge passed on through the ages. In the absence of large valleys or plains in their region, as in the case of all mountain peoples, *jhum* cultivation or slash and burn agriculture was their subsistence in the past. It still is the sole source of livelihood for a large number of people in the state of Mizoram and it has seen them through the devastating times in their history, especially two decades of armed conflict from 1966 to 1986.

Life has always been tough under such harsh geographical conditions. Yet, the *jhum* cultivation, an ancient practice of growing food in the mountains, which is based on group activities, created a shared bond with each other and with nature. All these shared values and ideas eventually morphed into a code of social conduct and a view of life, which guided the community in all aspects of their lives in the village. It sets moral, social and ethical standards for the people to follow and has become part of what is called customary practices of the

Tlawmngaihna, a term that could be loosely compared to the concept of Bushido of the ancient Japanese warrior class. It is an unwritten code which a Mizo person imbibed - and still does - through practice, social interaction, and social transmission

tribe. It is not a religion but is more of a social code called *Tlawmngaihna*, a term that could be loosely compared to the concept of Bushido of the ancient Japanese warrior class. It is an unwritten code which a Mizo person imbibed - and still does - through practice, social interaction, and social transmission.

Tlawmngaihna - the term can be broken down to mean 'humble service' or 'upholding humbleness in service' and carries in its meaning the intrinsic philosophy of service to the others, particularly the needy, sick, disabled and widowed under any and all circumstances. Most importantly, it means always being ready, and in a position to be a support, when called upon to help. There should be no excuse or feigning of being busy; they have to



Unmanned wayside stall - prices are written on each item, one can just pay and pick up the stuff

drop all their works and come to the aid of the needy. The core of the code was kindness—to be kind to the less fortunate and it also extended to animals, while hunting. This code also taught people to be thrifty, contented and hardworking to ensure that their families and village had sufficient food and no one died of starvation. People learnt about the code through stories and folklore passed down through oral knowledge and repeated as exhortations in gatherings and functions even today.

It is also referred to as *Zo Nun Mawi*, which translates to mean the 'Zo codes of beautiful living'. Today, this has translated into the concept of '*NghahloDawr*', i.e., unattended shops where the *jhum* cultivators set up bamboo stalls on the busy highway. There, they display their produce, with the prices written on them or on a piece of paper, and a

box where to deposit the money. Travelers are supposed to take what they want and pay the price in the box. This is done because in remoter areas the *jhum* farmers cannot spare their time to be away from the fields and run the shop. This kind of shops dot the remote highways of the state.

All these values enumerated above were manifested in practical life in various ways but mostly it was seen as the volunteering of labour to help a sick or disabled neighbour by arranging to work as a group in their *jhum* fields as and when required, be it in preparing the field, planting, weeding or harvesting. Often the village would get together to re-build or build anew the house of an incapacitated member of the village.

There was the '*lawm*' system through which a working partnership was set up among a few

neighbours for exchange of labor to look after the *jhum* fields. There was, and still is, the '*Hnatlang*', a system of calling on the villagers to come together for working on a community project by providing their free labor.

Elders also said that one of the codes was to ensure that another person is not put in a situation of embarrassment of begging particularly in the line of providing for his family. To illustrate this, they often spoke about how a person afflicted with the trouble of a poor harvest and his supply of rice finished before the harvest came round, he could silently 'take' or 'borrow' supplies from a neighbour's *buhzem* (store) and leave some signals that the store had been touched. It was understood that it would be returned at the next harvest. Through these signs the owner of the particular *buhzem*

would understand the plight that some needy person needed to share his supplies.

This unsaid communication was accepted and thought necessary so that the needy man was not put in a humiliating position of being known as a man who could not feed his family. But some said even this was not considered 'good neighbourly' enough. A good neighbour, according to the code of *Tlawmgaihna*, would look after the welfare of the neighbours so much that they should already be aware of the troubles of such a family and provide them even before they had to go and 'take' from the others' store of rice. Despite famines, revolutions and disasters of all kinds, there has been no starvation deaths ever reported in these hills.

(The *buh zem* or rice stores were huts on stilts along halfway from the *jhum* fields before reaching the village. The people stored all their

harvest of rice in the *Buh Zem*. Such stores of rice stores and many villages existing prior to 1966 were all destroyed and burnt down during the armed conflict that overturned all life in Mizoram for the next 20 years.)

Community leader, Tuahzawl



The code of *Tlawmgaihna* also put some rules on the community life such as this profound wisdom in a few words: "*sem, sem, dam dam, eibilhthithi*" meaning, "if things are equally shared there is life, if things are personally gorged or hoarded, there is death." Life in the hills based on *jhum* cultivation is subsistence and there is no scope for hoarding and profiteering. The other traditional wisdom linked to the code of *Tlawmgaihna* is "*dam lehtlangkhatah, thihlehmual-khatah,*" which underlines the oneness of the community which has to face "all difficulties as a group-either surviving together on one mountain or die together in one ground," reflecting the current global motto - "none shall be left behind."

The *jhum* economy did not encourage hoarding of any kind. This can be clearly seen in the practice of potlach by the rich men,

Wayside bus shed - villagers wait for transport to ferry their *jhum* crops to Aizawl



who for gaining higher status would have to throw periodical feasts in which they splurge their entire properties like mithuns or hunted animals, rice, varieties of rice beers, and even hand out woven cloth to the village. Men who gave the biggest feasts were looked upon as having attained a great status and there were special shawls which could only be draped by them. In anthropological interpretation this custom was the system through which anyone with more property was brought to equal status by having him distribute whatever wealth he had.

The locals said the spirit of *Tlawmngaihna* is still alive. Hnuna, a man from Rawpuichiip, a village near Tuahzawl in the Mamit district, said the village still comes together to help out in the *jhum* field if required, the marginalized have their homes rebuilt when required, the elderly who are alone are looked after by the neighbours, when the citizens come out in storm, when there is an SOS call to help in a disaster, accident, to look for the missing, to do community policing, cleaning the village, even building roads and bridges when required; all this has been done, and generally will be there to help individually or as a group or as the Young Mizo Association, a ubiquitous community-based organization, whose motto is to keep the code of *Tlawmngaihna* as a living spirit of the Mizo ancients.

When someone goes missing or got drowned in a river, the custom is for the whole village to hunt around the likely places for seven days. They are the first responders in every disaster and in time of need. This code has been seen in action time and again even today as whole localities and villages drop all other works and get together to help the family in distress to find their members, dead or alive.



A meal of *jhum* rice and vegetables - just sit around and enjoy !

This code is adhered to more in the rural areas and it is them who kept it alive, some feel. They point out that during the Covid-19 pandemic and the lockdown of almost two years, the people of the villages surrounding the Aizawl city periodically sent vegetables from their *jhum* fields as well as wild vegetables they had foraged from the forests to the city-based localities to be distributed to every household. All this was freely given to the town-dwellers starved of greens during the lockdowns.

The rural community and social spaces seem still seeped in the philosophy, and the values are holding out tenaciously in the face of fast paced modern individualistic civilization that has overtaken every part of the world, including this tribal state, the code of *Tlawmngaihna* that upholds the

supremacy of the values of sharing, thrift and non-profit in the traditional *jhum* economy. This philosophy coupled with the ancient heritage of intimate traditional knowledge of living in the hills is the foundation of the social structure that has protected and housed the Mizo people through history. But the spirit of this invaluable code has however failed to cross over into the spaces which are ruled by highly educated urbanized modern tribal elite who handle the state's administration. Here the opposite of the code of *Tlawmngaihna*, i.e., the profit motive, private wealth accumulation, hoarding, consumerism and privatization have taken over as the tribal community moves to merge itself into the glitter of the global capitalistic model of life. ■



Rice in Terraces, *Jhum* in Forest

*Following his ancestors' footsteps, Khrieni Meru, the proud son of a farmer, lovingly nurtured centuries old tradition of upland farming at Khonoma, Nagaland, and wished the people of his village continue the practice, *jhum**

I am a farmer. My ancestors were also farmer, and like me, they grew wet rice in terraces and practiced *jhum* cultivation – that which others call swidden farming – on the hillsides of my mountainous home at Khonoma, Nagaland. My paddy fields grow rice and my *jhums* grow many vegetables, such as, potatoes, pumpkins, soyabeans, garlic,

By Khrieni Meru

maize, cucumbers, chillies, job's tears, cabbages, ginger and so on.

For more than 600 years, the people of Khonoma have practiced the cultivation of wet rice terraced fields and *jhum* cultivation in the forest. We bring water from the source of the river and put it into the paddy fields, and we grow our

own rice to feed our families. In that time nothing has come to harm or destroy our paddy fields or diminish their capacity to provide.

Our lives are not rich and we must work hard, but we never go hungry; our lifestyle and environment would be envied by many low land city dwellers. I often reflect upon the wisdom those ancestors, who all those centuries

ago, decided that the place in which I now live would make a good site for a prosperous settlement.

The Naga history is replete with violence and bloodshed. I hope the time has now come when those horrors are behind us, and we can turn to our finest attributes: our pride in being Nagas, and our intimacy with the soil, the forests, and the seasons, such that we can prosper in this world of modern marketing.

For me, the history of Khonoma falls rather simply into two eras: before Christianity and after Christianity. Before Christianity, the people went to their fields and offered prayers to the gods they perceived to exist in nature, for good rains after sowing and successful harvests after a year free of mishaps. The annual calendar showed a series of rituals and ceremonies that bound together a traditional relationship between those old Gods, the physical

environment, the people and their crops. Nowadays, there is comfort in knowing that the calendar has not changed much since the arrival of Christianity. It still follows the seasons and the crops, but instead of worship by ritual in the fields, we go to church on the days of old festivals and pray to the one God. Many things have changed for the better with the coming of Christianity – most importantly, our lifestyles.

Khonoma's story began many centuries ago, when a group of people decided to start a new village. They planned that all who lived in this new village, would be equal, to the extent that they would share the same way of life, wear the same dress and eat the same food. They brought chickens, dogs, cattle, and – importantly, seeds to this place, and they settled down. Everything was new. They could experiment with new things; create a new lifestyle.

When they were on their way here, they saw a big crab, and crab had many small ones. It augured well for the new village. There was no anger or dispute among these people; they felt sure the new village would be a happy one. They called it 'Khwúnoria'- a name that, across the years and the unfamiliar tongues of foreigners, eventually became Khonoma.

It is said that Khonoma was so blessed by its location and its people that even the devil was afraid to come here; people were said to lead an exemplary life of following customary laws, and in the eyes of their own community, doing the right thing. They lived to honour their Gods and they prayed in worship of rain, the sun, the moon, and the weather.

The people of Khonoma lived a good but careful existence. For everything, they dependent on their Gods, believing that if they prayed fervently, everything would

Terraced rice fields of Khonoma



be alright. Nobody acted against God's will; there were heavy punishment if the rules were not followed.

Now, most of the people of Khonoma are Christians. The social changes have been substantial, but we are still farmers and our relationship with the land and the soil is largely unchanged.

Khonoma's farmers learned a long time ago that *jhum* cultivation was more productive – in today's parlance, more profitable – than the wet-rice terrace farming. Every year, they select some sites to be cleared for *jhum* cultivation, and one person can cultivate each plot of land for two years. Then they let the trees grow, so that the soil will once again be fertile, and four years after it was first cleared that land will be cultivated again.

The people plant a variety of vegetables, because some soil suits particular kinds of vegetables. They

move from one place to another and so they cultivate different types of land. Sometimes, it bears good vegetables; sometimes the land may not suit some types of crops, so their choice of crops to plant depends on the land and the soil.

Before Christianity, the people enjoyed cultivating their *jhum* fields very much. It was somehow like their culture; they gathered, sang traditional songs and worked together. More than 100 people

*Khonoma's farmers learned a long time ago that *jhum* cultivation was more productive – in today's parlance, more profitable – than the wet-rice terrace farming*

may gather in one field and they enjoyed their work, especially preparing their land and in the sowing season. The people put on their traditional dress and worked together.

The young people, in particular, enjoyed these activities because it was a time to get together, make fun, learn new songs and wear their best traditional attire. Every young person was wary of the rest; they did not want to do any bad things, or let one hear bad stories about them. Everyone wanted to live better than the others; they were very competitive.

Even during the harvest season many people gathered and worked together in one field. They helped one another; they collected all the rice and carried it back to their respective homes. Then, they organized a feast. They cooked rice and meat, drank rice beer, enjoyed eating with their relatives and gave



meat to their neighbours. The villagers got together to enjoy the occasion with pure hearts; there was no discord, they loved each other. There was great unity; they worked together, laughed together and shared their problems together.

After the coming of Christianity, their lifestyle changed; they were introduced to modern life. A part of modern life is demand for 'organic' food. Any vegetable that is grown in a *jhum* is organic, because the people of Khonoma do not use any fertilizers. We believe that if we put chemical fertilizers or pesticides on our *jhums*, it will destroy not only the pests and the insects, but also the land.

We make our *jhum* fields fertile by using a tree that is native to the Khonoma part of the world. It is called Alder, or Nepalese Alder (*Alnus nepalensis*). We also plant timber trees – holook and teak. But most of all, the people plant Alder trees because the leaves of the Alder make the land fertile when they fall to the ground. When we care for the Alders that grow in our *jhums*, they may live for hundreds of years, and an older an Alder tree grows, the better it becomes. The roots of the Alder also make the land fertile. The trees are not difficult to plant; they will grow from seeds. Every year, as we open fresh *jhum* fields, we cut firewood from the Alders and we use all the leaves to help fertilize the *jhums*. The Alder trunks remain, to grow again when our cropping is finished.

Firewood is a very important product of *jhum* cultivation, because very few people in Khonoma cook on modern stoves. However, this is not the only reason for *jhum* cultivation as we also can gather firewood from community forests. Part of the reason for big trees in our *jhums* is to save the soil and protect it from erosion. But the

real reason for continuing *jhum* cultivation is that it produces a great variety of vegetables.

Before Christianity, the people of Khonoma mostly planted Job's tear and millet. These were their main foods; they used them in place of rice. Job's tears was also good for making rice beer, and millet was ground and baked into cakes and snacks. But in the old days, Job's tears and millet were mostly used for making beer and wine. So, in *jhum* cultivation every one planted

We make our jhum fields fertile by using a tree that is native to the Khonoma part of the world. It is called Alder, or Nepalese Alder (Alnus nepalensis)



soyabean and so on. Sometimes they continued with the old ways, and exchanged their vegetables or gave them away to neighbours and relatives. Then they began selling their vegetables in markets and making money for their living.

Everyone in the village continues to practice agriculture. They plant their own rice and vegetables and they sell their vegetables to make money; they have learnt how to live and how to earn. People still enjoy *jhum*



millet and Job's tears. After Christianity came to the village, most people stopped drinking wine, so they did not plant so much Job's tears. They turned to a wide variety of vegetables, and we learned different growing techniques and different timing for sowing different types of seeds.

Slowly but surely, the people began to sell their products. They were still growing squash, chillis, carrot, maize, beans, pumpkins, sweet potatoes, cabbages, potatoes,

cultivation. They plant Alder trees and potatoes, and they sell the potatoes and the vegetables they harvest from the same field.

The people of Khonoma can claim to make big profits from *jhum* cultivation, but not all the profits are monetary ones. They can sell their vegetables and they can harvest firewood from the Alders. In doing so, the village saves a lot of community forest, because the village consumes a lot of firewood, and if we did not practice *jhum*

cultivation, many trees would be lost from our community forests to fuel our domestic fires.

Khonoma's forests belong to the community and the young people are charged with caring for the forests. People may plant trees and raise cattle in the forests because cattle are not brought home to be reared in the village. But no one is allowed to cut trees without permission. The strictness with which this law is maintained is akin to another community rule that has remained unchanged by the arrival of Christianity. In the old days, the sowing and harvesting of crops were done at times convenient to individual farmer, but only after the people had prayed to their gods for blessings upon the crops. A day was set aside for prayer to protect the crops from rain, wind and storms and the entire village observed that day very strictly. If any individual disobeyed the rule, he or she would be expelled as being unsuitable person to stay in the village. The day of prayer is still observed with equal importance; work is strictly set aside. But the prayers are mostly said in church, to the God of Christianity.

Before Christianity came to village, nobody bought or demanded any food stuffs from outside. Some things, such as, salt came from elsewhere, but in those days, people planted their own rice and Job's tears, and they got firewood from their fields. They were satisfied with what they grew. Making rice beer was a common activity in all houses, because that was one of their main foods. Every thing was changed but the practice of agriculture, including *jhum* and wet rice terrace cultivation, remains very common and will continue in Khonoma in the next generation and in the future.

The status quo must be maintained in the Khonoma village.



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Jhum cultivation must continue both to make our soil fertile and to provide firewood, so the village's community forests are protected. If people keep cutting the forests, then all of our trees will disappear and there will be no forest left.

I can look back on hundreds of years in which my ancestors have been practicing *jhum* cultivation in Khonoma village. The forest is still in good health; the soil is as fertile as it ever has been, and over the centuries, *jhum* cultivation has brought us nothing but strength and benefits. I must conclude that the people of Khonoma – this author among them – should never be stopped from practicing *jhum* cultivation. Rather, we should begin every new *jhum* year with the aim of developing new cropping techniques, to make us even more efficient. It can bring a lot of profits and benefits, and no one will get lost in practicing *jhum* cultivation. ■

Mr. Khrieni Meru wrote this article in 2015, which we are reproducing here as remembrance of his passion for *jhum* farming. He passed away on 31st May, 2016 at the prime age of 60.

FUTURE OF *JHUM*

Tales of Two Villages

The shifting cultivators of Pathso Nokeng and Kingniu villages in the Noklak district of eastern Nagaland seem to have caught between tradition and modernity

Not very long ago, shifting cultivation was the only source of sustenance for most of the villages in the Noklak region, now the eastern most district of Nagaland, bordering Myanmar. In the old days, elders say, villages used to be set up at a location surrounding good forest for cultivation and hunting. There would be a long stretch of forest that serves as natural boundaries or just a buffer between neighbouring villages. Pathso Nokeng is one of such old villages inhabited by the Khiamniungam community; in fact, the name of the village is self-explanatory - 'Pathso', meaning refuge or a gathering place and 'Nokeng' means, old village. However, no one is quite sure of the antiquity of the village, except that, the elders claim, "the village was there since the first Khiamniungan tribe came into being. According to folk history of the tribe, the Khiamniungan people emerged out of water - 'Khiam', means water, 'nyu' means mother and 'ngan' means source; thus, taking all the three parts together, the word 'Khiamniungan' may be translated as, 'Original (mother) source of water'. Pathso Nokeng is located about 15 kms away from the mythical place of origin.

For generations, the Khiamniungans grew food on the slopes of wooded hills, rotating their farm plots on the regenerated forest patches. People then did not have

By Pongsa Lamthew

any idea about the so-called modern Gregorian calendar of months and year- even now many elders do not know - but the years were calculated as per the cycle of the *Jhum* forest. Likewise, the months and seasons of the year are divided as per the cropping calendar, say, the time for sowing of seeds of various crops and vegetables, weeding and harvesting among other activities related to



jhum or, what is locally known as, 'Kouwai'. But within the farming system, different terms are used at specific stage of farming. For example, when a particular forest patch is selected for current *jhum*, it's known as, 'aimhe' and when the farming work is initiated in the cleared *jhum* area, it is referred as 'aim.' After cultivating the farm land for a year or two, when the plot is

abandoned, it is called, 'Beheiu', where villagers plant leguminous crops like beans that help fix nitrogen component and increase soil fertility. It will be almost over a decade or more before they return to the previous *Jhum* land for cultivation again, thus maintaining the fertility of the soil, regeneration of forest, biodiversity and the ecological balance of the forest.

Indeed, it was a blessing to be indigenous inhabitants of a lush, rolling hills and mountains surrounding the village where the Khiamniungans lived in relative isolation but in abundance of food and materials that helped them manage their lives. Their social and cultural life revolved round the *jhum* cycle. *Jhum* plots generally belong to individual family or clans in the village; there is no community forest or forest commons within the village. The new *jhum* sites are decided as per the sequence of the

A view of Pathso Nokeng

forest fallow cycle practiced since the ancient time under the supervision of the village council or *Gaon burah*." There was no concept of terraced farming or monoculture plantation in our area those days, all basic necessities of life - food, shelter and clothing - were derived from forest and its resources," said Mr. Thangem, 65, while narrating his childhood days in the village.

Job's tears, sorgum and millet grown in the *jhum* fields along with varieties of vegetables, were the staple crops. Rice was introduced later. "We used to have nearly more than a dozen varieties of millet, some were cooked with rice, while others, especially the sticky ones were used to make a kind of indigenous bread. Some varieties were grown particularly for making traditional brew mixed with quinoa seeds," he recalled. Quinoa seeds when fermented with millet add a special flavour to the brew, which is unique to the Khamniungan tribe. These plants are also grown along with millet in the *jhum* field for this purpose.

Drivers of Change

Jhum forest landscape is changing fast as the Khamniungans are grappling with modernizing forces and their impact on socio-cultural and economic life of the community. Over the past decades, Pathso Nokeng has grown into a large village, home to over 550 families. It is expanding fast with the creation of the Noklak district, the erstwhile frontier sub-division of the Tuensang district, which was inaugurated in January 2021. It comprises five development circles. Pathso Nokeng village falls under the Panso circle, about 37 km from the Noklak town, the administrative headquarters of the district. And, in the last 10 years, two new villages came up in the adjoining forest areas of the old village.

Almost 90 percent population of the village is engaged in agriculture and allied activities, but about half of the total families still depend on shifting cultivation. Other than farming, people have started small businesses like - small shops, bamboo handicrafts, transportation, carpentry etc. *Jhum* is not much practiced by the community after the last generation. It appears,



Enchanting Kingniu!

By Rehana Rehman

Nestled in the hills of frontier district of Noklak in eastern Nagaland, Kingniu village exhibits much of its traditional way of life. A visitor will instantly fall in love with the scenic natural setting in which the village is settled and the warmth of the hospitality of the Khamniungan people.

Perhaps one of the last of the warrior headhunting tribes, the Khamniungans of Kingniu village are known for their unwavering dedication and hard work. Their profound respect and deep connection with nature have led them to attain a harmonious, self-sustaining way of life.

Life in Kingniu revolves around *Jhum* or shifting cultivation. Almost every one of the 120 plus families in the village engages in *Jhum* farming. The villagers have worked out an elaborate system of *jhum*



Mr. Pukho and Mrs. Shongmao

site allocation as well as the management of the fallow forest cycle. The village council of Kingniu has earmarked 10 specific locations across the large hilly landscape within the village boundary. Out of these, eight are exclusively reserved for the village, while the remaining two *jhum* sites are shared with the neighboring villages of Nokhu and Sanglao. As per the village rules, all the households



The village ‘time-keepers’ with Head *Gaonburah* (right)

move to one of the identified *jhum* sites, where each family gets a plot for *jhum* cultivation.

There are village ‘timekeepers,’ who announce the best times and seasons to plant and harvest using their traditional knowledge. They usually start with paddy, then move to millets, and if the soil is good, they grow different vegetables. In a single plot, one can find about 18 to 20 diverse varieties of vegetables and herbs flourishing. Each family ensures a plot in every *Jhum* cycle since fallow periods can extend up to twelve to fifteen years. “*Jhum* farming gives us all the healthy food our bodies need for nourishment, which rice alone can’t provide,” says Mr. Pukho and his wife Ms. Shongmao. Their granaries can sustain them for up to three years, yet when the new harvest arrives, many willingly share their bounty with those in need.

While Kingniu village is typically serene, it comes alive when children studying elsewhere return home for Christmas. The children are

generally sent out for further study once they finish their primary education in the village. Gathered around the kitchen fireplace in the heart of their homes, they share stories, skills, and cherished memories. This is where the past is seamlessly woven into the present, creating new stories for the generations to come.

However, with the need for better education, material comforts, and the flow of benefits of various government schemes reaching the villages, there is a risk of upsetting the balance and harmony with nature that has sustained the community for generations. The challenge lies in retaining the wisdom of contentment passed down by their ancestors, who found fulfillment within limits.

Change is inevitable, but will Kingniu be able to retain its pristine beauty, its exquisite art, craft, material culture and the enduring practices of the indigenous tribal communities? Only time will tell. ■

somewhere along the way, the traditional food production system lost its purpose to this generation. The young generation is no longer interested in the age-old family farming activities, and have little knowledge of indigenous food growing culture. Moreover, “*jhum* is labour-intensive and full of drudgery but yields very little,” argues 26 years old Hatho. One of the main reasons for this lack of interest in farming among the youth is the availability of food grain supplied through ration shops to the village. And with the improvement of roads and transport system, varieties of industrial and farm products, including packaged and processed food items are now reaching the far-flung areas of the district.

At the same time, the expansion of government departments, administration and infrastructure development activities – schools, health care centers, electricity and drinking water supply, cooking gas etc., among other civic amenities - all these are impacting the lives of the communities, especially the young population. They are adopting the modern urban lifestyle fueled by market forces, smart phones, internet and social media. They are gradually being pulled by the attraction of urban centers - where various economies avenues are available - in search of job and better standard of living.

Young people are focused mostly on earning their livelihood by learning new skill sets like, masonry, carpentry, mechanics, electricians, drivers etc., which help them find works and wages in the urban towns. Among the youths who have better education, migrate to urban cities and towns in search of white-collar jobs. Because of the lack of these civic amenities in villages, and very little scope of earning money in the village, young

people are moving to urban areas. The rest of the population in the village, including those families who depend on *jhum*, have become quite dependent on subsidized rice, dal, sugar, oil etc., delivered through the Public Distribution System. Government administration and departments are reaching out to villages with their numerous schemes. Agriculture being the major source of livelihood for the majority population in the village, the government is encouraging the farmers to adopt settled cultivation and cash crops instead of *jhum*. With financial support and technical advice from the department, some of the beneficiaries have converted their *jhum* fields to terraced rice farming and introduced high-yielding and hybrid seeds in their farms. A few others have gone for commercial monoculture plantation such as, tea, coffee, cardamom etc., which are fast replacing the centuries-old indigenous farming practice.

Transition to Cash Economy

The traditional food production system and resource use and management practices are undergoing changes, so is the community life in the village. Villagers are getting used to subsidized essential commodities and free rice. They seem to believe that the government is there to ensure food security. "So, why toil in the *jhum* fields, when the government is already providing the necessary food grains?" This kind of thought is shaping the outlook of the young ones in the village, as it appeared during interactions with random groups of villagers on the issues of self-sufficiency and erosion of ancestral knowledge of the community.

Of course, some are quite skeptical of 'free or subsidized' schemes, which may discontinue

anytime. Schemes always keep on changing and only few people benefit from them. For example, Hempao, 49, points out: "About 45 percent households of Pathso Nokeng village got LPG connections with a full cylinder, but many families had to give up LPG as they could not afford to refill the cylinder due to high cost. May be, only 10 percent of families still cook with gas." The rest of the population totally depend on firewood, which come from the *jhum* system or the fallow forest.

Future of *Jhum*

What is the future of the indigenous farming system? What would happen, if people gave up *jhum*? The elders still believe that *jhum* is very precious to those who live in the uplands, because *jhum* system provides everything that a family needs, mainly crops, vegetables and firewood, and must be continued and its knowledge should be preserved and disseminated to the coming generations. "If *jhum* is discontinued, the Khiamniungans will loss the age-old knowledge of plants, seed conservation and food production, along with other forest resources - wildlife and biodiversity. Many of the young people now do not even know where is the family *jhum* land and forest, let alone knowing how to do *jhum*," one elder lamented.

He said, "Each individual farming plot in every forest is demarcated with some stones, so if *jhum* fields are not cultivated according to the fallow forest cycle and customary rules for a couple of rounds, there are high chances of encroachment of forest land by a farmer of the neighboring *jhum* field." And even worse, he feared that "the children of the owner may not even know where are their ancestral forest lands, and in the process, they may become landless in their own village."

There are families whose children have moved out of the village long ago, and are unlikely to return to their ancestral village. This trend is growing, especially among the young generation, many of who have moved to urban towns and are living a hand-to-mouth existence, whereas a few have made it big through years of hard work and perseverance. Even many of their food habits have changed, as they have developed taste for 'fast food' and restaurant culture!

Of course, now people are more aware and open to experiments with new innovative ideas and technology. So, instead of *jhum*, some farmers are setting up permanent farms, integrating agroforestry, horticulture orchard, Animal Husbandry, Fishery, and Apiculture, and developing the space as recreational or ecotourism sites. But then, they are a few educated lot, who have exposure to new ideas and technologies, and resources to try out innovative projects.

Pathso Nokeng is fortunate to have a few knowledge-holders of the community, who are still practicing *jhum*, and they are always ready to share their knowledge to anyone who are curious about their ancestral knowledge. Though most of the traditional seeds have become extinct, a group of young people has set up an 'Indigenous Seed Bank' in the village, where local seeds are collected, preserved and distributed to any interested farmers, so as to make sure that all the indigenous varieties of seeds remain available within the community for the sake of the posterity. There is also a "cultural group" whose responsibility is to document and also practice along with the community, all the traditional customary practices, including some rituals associated with *jhum*. ■

Is Agroforestry Model a Sustainable Alternative to *Jhum* ?



For centuries many indigenous tribal communities in the uplands of Tripura have been practicing shifting cultivation, (also known as, 'Huk,' 'Hook,' 'Lwi,' 'Lou' in local dialects) in the state, but commonly referred as '*jhum*' that provides them with all the necessities of life – food, fuel, fodder, fiber, and herbal care etc. They grow a wide variety of cereals, pulses, spices, and vegetables along with rice on a single plot. The shifting cultivation, particularly the method of preparing a farm plot, requires clearing of a patch of forest by slashing the trees and vegetative materials therein, which are then left to dry before these are set on fire to produce ash for treating the soil and preparing the farm bed for sowing.

However, over the years, because of various factors the

By Thomas Malsom

productivity of the shifting cultivation has drastically declined, and the entire production system has become now unsustainable. One of the main reasons cited for the gradual deterioration of the farming practice is the non-availability of adequate land, including shortening of the fallow period, which affects regeneration of forest and recovery of soil health. This leads to land degradation and poor farm performance. That is why a longer fallow period that allows reforestation of land and reclamation of soil fertility, is critical to the better crop yield in the *jhum* system. Unfortunately, the fallow cycle has come down to less than five years due to rise in population and fragmentation of fallow commons. But despite these

adverse conditions, thousands of impoverished tribal families in the Gomati, Dhalai and North Tripura districts continue to eke out a living by dint of its indigenous farming knowledge.

The government of Tripura, the academic and the scientific community generally viewed this ancient upland farming system as 'primitive and wasteful' and hence, have pressed for replacing it with better land use practices. In the past decades, numerous attempts were made to wean away the tribal upland farmers from the 'environmentally destructive practice' of shifting cultivation and 'help them' adopt settled agriculture system. The hill farmers were encouraged to take up new economic activities under various departmental schemes like horticultural crops (pineapple, lemon, orange, banana etc.) and

rubber plantation. Unfortunately, there is very little official information available about the outcome of these interventions and their impact on the lives of the tribal families. Even the very basic data such as, the number of tribal families solely dependent on *jhum* or, the area under the shifting cultivation and, exactly how many tribal families have so far been rehabilitated or have adopted settled cultivation, are not found, except some estimates quoted in some 'scholarly research' studies and books.

For the past decade or so, the state government has been implementing a few agroforestry projects in the state aimed at increasing forest areas through regeneration of degraded forest lands as well as improving the socio-economic conditions of the forest dwelling communities. These interventions are aimed at essentially to expand the state control over the community-held forest fallow commons, which are an integral part of the *jhum* management system, in the name of improving the socio-economic lives of the shifting cultivators. The agroforestry-based interventions in the state have been initiated in pursuance of the National Agroforestry Policy, 2014 to achieve, broadly, two key objectives: One, to expand the forest areas and increase green cover through extensive afforestation activities; and two, to bring the fragmented forest plots distributed among the tribal families, including the shifting cultivators, as per the Recognition of Forest Rights (RoFR) Act, 2006 under better land use systems that will help create sustainable livelihood for the tribal communities in the uplands and improve their socio-economic conditions.

(Agro-forestry) interventions are aimed at essentially to expand the state control over the community-held forest fallow commons, which are an integral part of the jhum management system, in the name of improving the socio-economic lives of the shifting cultivators

Currently, the state is implementing various agroforestry-based projects (SCATFORM, CREFLAT funded by Japan and Germany respectively), besides other departmental schemes like, *Mission for Integrated Development of Horticulture (MIDH)*, *Chief Ministers' Swanirbhar Parivar Yojana (CMSPY)*, *Integrated Watershed Management (IWMP)* in the tribal villages of Tripura. All these projects are similar except for some nomenclatural differences. These projects mainly focus on regeneration of degraded forest and investment on sustainable livelihood development for the tribal communities. Other objectives are to improve the quality of forest, increase forest areas, reduce soil erosion, and rebuild soil fertility as well as create sustainable livelihood opportunities for the forest-dependent tribal communities.

Through the project activities, the state government seeks to work with the tribal families and help them learn better management of

their forest land holdings, by which they can increase their family income as well as contribute to the ecological resilience. The project functionaries claim that they will select tree species and crops as per the choices of the local communities, while implementing the agroforestry activities. But is this agroforestry model really working for the shifting cultivators and other marginalized forest dependent communities? Let's look at one of such tribal villages, where most of the families have now adopted cash-oriented agroforestry or horticulture-based economic activities.

Kamalachara : A case study

Kamalachara is one such village, where the model of agroforestry is being implemented. This village falls within the Ambassa development block in the Dhalai district and is located about 18 km towards the west from the administrative headquarters and 95km from the state capital, Agartala. The inhabitants of the village are composed of four tribal communities - Hrangkhawl, Molsom, Garo and Kuki.

The village also comes under the jurisdiction of the Tripura Tribal Areas Autonomous District Council (TTAADC), an 'autonomous' institution which has been set up under the Sixth Schedule of the Constitution to provide self-rule for the indigenous tribal communities in the state. An elected Village Committee (VC) comprising members from two villages (Kamalachara and Dhanchara) coordinates all development activities implemented through the autonomous council and the state departments.

Kamalachara is one of the largest tribal villages in the district with over 800 households settled therein, including the Dhanchara areas. Much of the village area

include erstwhile community forest commons, but now designated as government forest lands, where, earlier, most of the tribal families used to practice shifting cultivation. However, currently, many tribal families received land *pattas* under the RoFR Act in those forest lands, and therefore, the entire village area is owned by individual tribal families.

There are, of course, about 10-15 families, which still depend on *jhum*, as they do not own any farm lands in the village. They ask for land for *jhum* from individual owners in exchange of some cash or sharing *jhum* produces, especially paddy. Unlike other tribal states in the region, tribal communities in Tripura have lost their traditional village governance institutions, and do not have control over land and its resources, except for historical customary rights of access to natural resources, including forest wherever they have settled for centuries, which are now mediated through the Autonomous tribal

Council. But the overall development of the tribal areas largely depends on the support of the state departments. Thus, all forestry and agroforestry activities and schemes are implemented through various departments, particularly the forest department. At the village level, the Joint Forest Management Committees (JMFC) have been set up by the forest department to implement all kinds of forestry schemes in the officially recorded forest lands.

Unfortunately, the JFMC remains mostly inactive throughout the year," says Nayani, former vice-chairperson of the Kamalachara Village Committee. "Occasionally, they (forest department) distribute some saplings of fruit trees and commercial plants among villagers for plantation. That's all." Villagers say, various departments approach them with different income generating activities under some schemes, most of which are discontinued within a short time;

there is no continuity of support system, and so, nothing works for better.

People are continuously changing their land use practices in order to generate income for meeting their family needs – particularly securing food, education of their children and health care, besides other every day requirements. Earlier, the villagers claimed that they used to get a plenty of vegetables directly coming from the *jhum* and other wild edible plants from the forest fallow. But now they have to buy vegetables from the market. After abandoning shifting cultivation, most of the villagers are now converting their *jhum* lands into cash crops plantations, either because of conditions or guidelines in order to secure various government schemes and subsidies or due to their own understanding of local markets and economic prospects. A few landless families still continue to depend on shifting cultivation,



though there is hardly any land is available for *jhum*. This leaves them at the mercy of landowners or forces them to occupy forest land to do *jhum* for survival.

The villagers are being told all the time that they should take up commercial crops and plantation for raising family income, instead of *jhum* cultivation, which is less productive and environmentally destructive. Accordingly, they are planting time to time those plants provided by departments of horticulture, forests and VC free of cost. Earlier, villagers were encouraged to take up rubber plantation on the *jhum* lands. Many of them planted rubber and were getting some income, but due to dip in price of rubber in the market, they are now shifting again to another commercial crop, areca nut plantation, which seems to offer them better economic returns.

Even the forest department is distributing areca nut saplings to villagers, who are opening forest areas and removing even bamboo groves for areca nut plantation. Under the ongoing agroforestry projects in Tripura, though the forest department has vowed to consult the community in matters of selecting trees species, in most cases this practice is not followed. Instead, villagers are given certain species selected by the department for plantation. People do not like to plant slow-growing timber species such as, teak, gamair etc. They also say the forest department tries to intervene in land use issues on the *patta* lands, as these legally remains under the control of the forest department.

So, it's pertinent to ask here: whether or not have the ongoing agroforestry interventions to replace 'wasteful' shifting cultivation really fulfilled the principal objectives? Has the forest area increased and forest cover

agroforestry interventions are not at all a viable and workable alternative to or, substitute for shifting cultivation as a system of land use, which undermines the immediate need of food and energy (fuelwood) security for the tribal communities



improved in the project villages? Do the rural communities have sustainable livelihoods and income, as envisioned by the forest department?

It's clear from what the villagers say that these agroforestry interventions are not at all a viable and workable alternative to or, substitute for shifting cultivation as a system of land use, which undermines the immediate need of food and energy (fuelwood) security for the tribal communities. The promotion of commercial crops and plantations through these

agroforestry activities is intended to extract higher economic values from land and its resources, raise income of the tribal communities and improve their economic conditions. But in reality, it has been observed, the tribal communities are always vulnerable to market pressures and volatility; they are not quite adept at dealing with market forces and intermediaries, including government agencies. Secondly, these activities are in a way incompatible with socio-economic and cultural values of the tribal communities. Because these market-driven interventions inject an invisible process that promotes unhealthy competition and individual interests, and weakens the age-old community support system and collaborative ethos, which are central to the socio-cultural life of the tribal communities. Thirdly, unlike shifting cultivation, which is managed by household labour, the maintenance of cash crop plantations requires financial investment in labour for resource harvesting and marketing. Villagers lament that they need to spend Rs 15,000 to 20,000 annually, leaving them with little profit margin.

Finally, the tribal communities, in their efforts to make money and improve their material conditions, are converting their fallow forest lands into commercial plantations, mainly rubber and areca nut, and in the process, may be inadvertently, promoting a monoculture at the cost of biodiversity and ecological wellbeing. In these circumstances, blaming solely the tribal communities and their practice of shifting cultivation for forest loss and land degradation appears to be a lame excuse for the utter failure of the agroforestry interventions by the state agencies. ■

Transforming Shifting Cultivation, But How?

For long, policy makers worldwide often viewed Shifting cultivation, a unique, diverse indigenous upland farming practice, quite negatively – slashing, burning and shifting – as one of the major drivers of deforestation and tried to replace it with alternative settled land-based activities such as, plantations and commercial crops – tea, coffee, cashew nut, rubber, palm oil and other biofuel plants. But none of these has really worked for these upland communities or helped address the complexities of shifting cultivation.

It was in this context, two decades ago, the International Fund for Agricultural Development (IFAD) invested in a study to look into the entire gamut of the shifting cultivation - variedly known as, *jhum* (India and Bangladesh), *taungya* (Myanmar), *khoriya* (Nepal), *tseri* (Bhutan) etc. - as well as the indigenous knowledge, biodiversity and forest management practices of the upland communities. The five-country study, initiated under the aegis of International Center for Integrated Mountain Development (ICIMOD), a mountain research and development think tank based in Kathmandu, Nepal, observed that “indigenous farmers have much to teach the world about the efficient use of their landscape for combined agriculture and forestry.” In fact, it said, “Shifting cultivators conserve more forests on their land than any other farmers (in settled cultivation in the plains) – while maintaining crop productivity, avoiding soil degradation, and conserving biodiversity.”

The report, the first of its kind that tried to relook at the issues, ideas and interventions arising out of old research on the shifting cultivation, also pointed out how the current policy approach aimed at eradicating the traditional upland agriculture and replacing it with settled cultivation or forestry activities might have disastrous consequences for both shifting cultivators as well as environment in terms of forest and biodiversity. All this may also lead to: (i) “Reduction of the total area available for shifting cultivation and subsequent shortening of the fallow phase, resulting in reduced productivity and food

security; (ii) Transformation of tenurial regimes from common property in which everyone gets a share, to private property, resulting in landlessness and poverty; (iii) Increased dependency on external market and political forces for which communities and their institutions are little prepared or supported, increasing their vulnerability; and (iv) Environmental degradation takes place in such areas where the traditional shifting cultivation practice has been distorted and acceptable alternatives have not been found.”

The ICIMOD study triggered a series of policy dialogues involving policymakers, scientists, researchers, and community leaders from eastern Himalayan countries, which considered the recommendations and later deliberated at the ‘Shifting Cultivation Regional Policy dialogue workshop for the Eastern Himalayas’ held on 6-8 October, 2004 in Shillong. A common ground was reached, yielding a collective resolve in ‘The Shillong Declaration on Shifting Cultivation in the Eastern Himalayas.’

The Government of India, after years of pussyfooting, finally came up with a new policy document, released by the NITI Aayog in 2018 titled, “*Shifting Cultivation: Towards a Transformational Approach.*” However, five years passed by since the document was released and there seems to be no action plan in sight.

In this section, Policy dialogue, we ask **Dr. B.K Tiwari**, one of the lead authors of the NITI Aayog Report, to tell us what is there in the document for the Shifting cultivators? What steps have so far taken to remove all legal and policy impediments to providing resources and support systems to the upland farmers for improving their farming systems? We also spoke to **Dr. Ashiho A Mao**, Director, BSI, and **Dr. K.M Bujarbaruah**, vice president, Indian Academy of Agricultural Sciences about academic and institutional research on *jhum* and other hill farming systems. How has the modern knowledge benefitted the upland communities in the northeast region as well as addressed the issues related to *jhum*? What would we lose if the shifting cultivation eventually dies, which seems to be the most likely scenario?



NITI Aayog Report on Shifting Cultivation

It's as Good as a 'Dead Document' Now: Dr. Tiwari

Dr B. K. Tiwari, formerly Professor, Department of Environmental Studies, NEHU, is one of the lead writers of the Niti Aayog report, 2018

GO: Is there really any serious academic research on Shifting cultivation in the northeastern region?

Dr. BKT: Certainly, the North Eastern Hill University (NEHU) has contributed quite significantly to the understanding of shifting cultivation in the region. During the late 70s through the 80s and till the early 90s, the shifting cultivation research was led by Prof P.S. Ramakrishnan at NEHU. Further research was done by Prof R.S. Tripathi and his students, and later on the late 90s, I started working on these issues. So, we have contributed a lot in our own way to the larger understanding of the shifting cultivation. Prof Ramakrishnan worked more on the ecology of shifting cultivation, trying to understand the processes of nutrient loss from the system, soil erosion, temporal changes in vegetation under five-year fallow, 10-year fallow, 20-year fallow, and so on. All that led to creation of knowledge on the ecology of shifting cultivation. Professor Ramakrishnan mostly confined himself to Meghalaya. After that Prof Tripathi also contributed quite a bit; he also worked in other northeastern states like Mizoram, Nagaland and Tripura to understand various issues related to the shifting cultivation. They were working on the same line as both were ecologists as well as botanists. Simultaneously, significant research works on farming systems and nutrient dynamics were done by the ICAR Research Complex for Northeastern Hill Region (NEHR) at Barapani (Umroi), Meghalaya, under the leadership of Dr D.N. Borthakur, and later by other scientists of the institute. Research was also being carried out in agricultural and traditional universities of the region, including Anthropological Survey of India and social science research institutes located in the region. During the early Nineties, the GB Pant Institute of Himalayan Environment and Sustainable Development and the Rain Forest Research Institute, Jorhat, Assam, came into being and started research on shifting cultivation.

My research group mostly worked on people, their livelihoods and income from shifting cultivation and its typology. We studied various traditional hill agriculture practices under the rainfed agriculture.

Our group continued research on shifting cultivation for over three decades, studying the temporal changes in the systems and how different tribes were modifying their practices to make the shifting cultivation more productive, efficient and remunerative. My focus was more people-centric and on documenting the temporal and spatial variability in shifting cultivation. I classified shifting cultivation in four types: (i) Traditional shifting cultivation with long cycle > 10 years, which is now mostly confined in Mon and Tuensang districts of Nagaland and in some parts of Garo hills; (ii) Distorted shifting cultivation where the fallow cycle has reduced to three to five years, the most degraded shifting cultivation, which is now prevalent in most of the northeastern states; (iii) Innovative shifting cultivation, which is transformed, improvised and adopted by farmers themselves applying their own ingenuity, experiential learning and adapting to the developing roles of market forces. Such farmers-led innovations have happened across the region, and (iv) Modified shifting cultivation refers to those cultivation systems where some external agencies have provided inputs through various externally aided projects like NEPED in Nagaland, NERCORM in Meghalaya, hill districts of Assam and Manipur, JICA in Tripura and Mizoram, among others. The objective of these interventions was to make the

system more productive and remunerative, and also to integrate the system with conservation aspects. All this suggests that shifting cultivation system is highly diverse and dynamic. In other words, it's good in some respect, and not so good or bad in other respects. Both extremes exist though separated in time and space. So, in nutshell, all I can say is that the universities and research institutions of the region have contributed a lot towards the overall understanding of shifting

cultivation system in the region and have created a huge body of knowledge that is available for planners and policy makers to use.

GO: Do you think the knowledge created through decades of academic research on shifting cultivation has been able to influence the policy makers, or for that matter, help the

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shifting cultivators and improve their farming practices?

Dr. BKT: Well, the knowledge creation by researchers, publishing reports and papers, and then reaching that knowledge to the policy-makers or the government agencies working for improving the socio-economic conditions of the farmers, takes a lot of time; there is always a time lag. It doesn't happen that today one publishes a paper, say on classification of shifting cultivation and tomorrow it will be accepted and acted upon. Sometimes the time lag between research and its adoption by policy makers is so long that by the time the policy makers understand the value of research it becomes outdated. In our country the desired level of interaction between the researchers and policy makers is lacking. The other reason and perhaps more important for time lag between the research and policy-action is the inertia or unwillingness to accept a change and continuation of the mindset of the policy makers inherited from the colonial legacy, who are of the opinion that shifting cultivation system causes forest degradation and soil erosion and so, must be stopped and, the shifting cultivators must be weaned away and rehabilitated through various schemes.

This opinion existed before independence when the colonial rulers looked at the region as source of timber and other forest products. They considered that the tribal people of the region were practicing shifting cultivation on forest lands and agriculture on forest lands is a bad land use, which cannot be allowed. The then foresters were of firm opinion that the shifting cultivation is a concession given to the people, not a right, and therefore, should be discouraged and stopped wherever possible. They formulated forest policies and acts considering that shifting cultivation was responsible for degradation of forests and was thereby adversely affecting the generation of revenue from the forests as during this period the object of forest management was to generate revenue to the exchequer.

This colonial mindset continued until few decades ago and the policy makers were not open to any

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research that advocated loosening of control of the forest department on forests and forest resources. Shifting cultivation is a practice where farmers clear a patch of regenerating forest/vegetation on hill slopes for growing crops, mostly on community lands. The subject of shifting cultivation is more akin to agriculture and hence it should have been dealt by the Ministry of Agriculture, but primarily, due to colonial legacy, shifting cultivation remained with the forest department under the Ministry of Forest and

Environment. After the creation of separate Ministry of Forest and Environment, the agriculture department played very little role in policy formulation concerning shifting cultivation. Because of that the forest officers thought that all shifting cultivation lands are forest lands, and they should be brought under forest, and no cultivation of crops should be allowed in the forest lands. They consistently tried to reclaim and rehabilitate the shifting cultivation lands by way of afforestation or regeneration of forests with least concern for the peoples' livelihoods and their food security. But we know long cycle shifting cultivation does not degrade or damage forest so much as it is said.

One more thing, the forest officers, who became the custodian of shifting cultivation lands because of the colonial legacy that had a long tradition of forestry education and research, continued with the same type of teaching, research and thinking process as was followed during the colonial period. All forest officers were trained on the lines that shifting cultivation is bad where the farmers grow agricultural crops on forest lands. And this training is given at the early stage of their career both at the state and central government training institutions. So, with that training they enter the service and run the forest department. Unlearning this mind set was a difficult thing, and this was one of the reasons why the present ecological and social research on shifting cultivation does not go to the policy so easily because of the legacy of improper understanding of facts relating to shifting cultivation.

GO: What about the institutional research on upland farming system?

Dr. BKT: The ICAR complex for northeastern hill region was primarily set up at Barapani, Meghalaya to study the upland farming systems in the region and address the issues of hill agriculture. The main thrust was the shifting cultivation research, and immediately after their establishment, the institute had contributed immensely towards developing models for the same through their farming systems research. But it appears during recent years the institute has broadened their scope of research and at present shifting cultivation has become a small component of its overall research programme. This institution should, have continued its research on shifting cultivation and widen their area of research by including the emerging challenges but sadly this did not happen.

GO: *There was little continuity of research on shifting cultivation both at the university and the institutional level, why so?*

Dr. BKT: The farming system models developed by the ICAR regional center were not applicable across the diverse altitude and terrain conditions of the region. The most important reason being that generally the entire landscape/hillock does not belong to one person; it's shared by several families. One family may occupy the upper part, and others down the slope doing different things. So, it was not possible to implement any model, in which different land owners were supposed to be cropping according to the model, and not as per their requirement of food or cash.

GO: *Apparently, there was also little or no interaction between the academic scholars and the institutional researchers, for example, between the NEHU and the ICAR on shifting cultivation, why was that?*

Dr. BKT: We have to accept that such research co-ordination and collaboration among various institutes is rare in our country. Even Prof. Ramakrishnan and Dr. Borthakur, who were working on shifting cultivation at the same time, were working in silos, in different places and doing different things, looking at the same subject from two different angles - one from ecological perspective, while the other more

The farming system models developed by the ICAR regional center were not applicable across the diverse altitude and terrain conditions of the region

on the agronomic practices. From their research output it is apparent that they did not sit together and applied their minds in a coordinated manner. The reason may be the academic background of the two scientists was different; while one was a botanist with background of ecology, the other was an agricultural scientist. So, they did not have the understanding of each other's subject.

GO: *Why do you think the scientists-farmers interface is so poor?*

Dr. BKT: The traditional universities have no extension wing so they do not have proper agency or facility to take their research to farmers. The agriculture universities and research institutes have extension department and funds for transfer of technologies. They do try to work with the farmers and test their technologies at the farmers' fields. However, in the field of shifting cultivation not much success has been achieved so far. The ICAR scientists have tried to work with farmers and implement their models in different places in the region. Whether these models worked or not is another thing, but they sincerely tried to implement their models through the KVKs (Krishi Vigyan Kendras) on farmer's field. The north eastern center of GB Pant Institute of Himalayan Environment and Sustain-able Development, ICIMOD and several other institutes and NGOs working on alternatives to shifting cultivation have tried to promote Sloping Agriculture Land Technology (SALT) in different states of the region but met with limited success. I agree with you that the scientist-farmer interface is poor particularly in the field of shifting cultivation and more so in the traditional universities and small institutes which are often short of funds and facilities for doing so.

Different models were tested in different places, and I have highlighted the same in a report prepared for ICIMOD in 2015. I fully agree with you that the extension part was lacking. Also, another thing lacking was that, suppose the ICAR found that its model didn't work, it should have then tried to improve the system, that perhaps they did not do, or suppose some other institutes tried to implement or demonstrate their model in different places, so they

must have got some learning, and with that learning they could have improved or modified that system. That type of feedback mechanism and then redoing over the model, I have not noticed. But I know they have tried to the extent possible to propagate these models.

GO: The institutional support system to help the shifting cultivators improve their practices has been totally inadequate, though there have been periodic initiatives through various projects or schemes - by government agencies, ICAR, GB Pant Institute and others...

Dr. BKT: The university or to some extent institutional research is often project based and the funding is not long term. To expect a scientist to work with farmers for a long time till solutions emerge is unimaginable in the prevailing pattern of research support. The ICAR regional center, Rain Forest Research Institute, GB Pant Institute of Himalayan Environment and Sustainable Development are mandated for this type of research and should be in a position to continue long term research of the type you are suggesting. But this is not happening for which there can be multiple reasons; one of which could be change in their mandate and frequent transfer of scientists.

GO: Why do you think the shifting cultivation is still continuing across the region, despite efforts to do away with it? What are the intrinsic values in the system?

Dr. BKT: Shifting cultivation is practiced in certain agro-climatic and geo-morpho-logical conditions. It is rainfed agriculture popular in humid sub-tropics receiving high rainfall. In shifting cultivation, crops are grown on sloppy lands having relatively fertile soil, and where quick regeneration of trees and other vegetations is possible. In such conditions, permanent cultivation or settled agriculture is not possible due to excessive soil erosion. Moreover, shifting cultivation required minimal labour and zero external inputs and at the same time provided the farmers with food security in remote places where fruits of

institutional research is often project based and the funding is not long term. To expect a scientist to work with farmers for a long time till solutions emerge is unimaginable in the prevailing pattern of research support

development were yet to reach. The practice also continued in the region because of low population density and plenty of land available for cultivation.

GO: In terms of sustainable land use practices on slopes, how do we compare shifting cultivation with other land use practices, such as commercial mono culture plantations - rubber, areca nut, palm oil etc.? We seem to allow any land use system which brings profit irrespective of its ecological conse-

quences.

Dr. BKT: If you visit those areas where the short cycle shifting cultivation is practiced, you will see that the system is no longer viable; it has become less productive and much less remunerative, and with the rise in population and growing requirements of people at the household level, especially need of cash income for education of their children and health care of family members etc., everyone wants a decent life with all the modern amenities, which cannot be met from this system. In that situation, the farmers themselves are adopting different kinds of livelihood.

While looking for the alternate crops the farmers are finding that the permanent tree crops and cash generating seasonal crops are the best option as they require minimum labour and yield good return. Some of these landuses are not ecologically sound but the poor farmers opt for short term economic benefit over ecological costs, which manifest in the long run. Cash crops like betelnut, rubber, oil palm, broom grass etc. are increasingly covering the lands erstwhile under shifting cultivation. This is happening due to availability of food either free or at a very subsidized rate provided by the government through ration shops and implementation of Mahatma Gandhi National Rural Employment Guarantee (MGNREG) scheme which has at least partially fulfilled their cash needs at their doorstep. The availability of food and other goods has considerably increased if cash is available. So, the erstwhile shifting cultivators are slowly moving away from shifting cultivation and opting for cash crop cultivation. A good number of erstwhile shifting cultivators do not grow any food crop now, they buy

it from the market with their income from the sale of cash crops, betel nut, pigs, eggs, chicken etc.

GO: *There is no disagreement on this but this is not my point, I am asking, when the government or scientists are saying that shifting cultivation is bad, say, in terms of deforestation, soil erosion, emission of carbon due to forest firing, we need to compare this system with other land use practices, say, brick fields or mining*

Dr. BKT: I am coming to that, as I said the shifting cultivators themselves have abandoned jhum in many places and they have gone for cash crops, like broom grass in Ri-Bhoi and other areas, largescale betel nut plantation in Garo Hills. So, they themselves are moving from age-old traditional agriculture to modern cash crops and mostly tree-based or horticulture-based plantations, which they have found more remunerative; their standard of living has increased, they have built better houses and their life style is much better. In other words, the jhum farmers have transformed themselves into cash crop cultivators.

GO: *What you are saying in essence, a system is good if it generates cash and income, it does not matter if it damages environment like, jhum is bad because of burning but brick fields are alright because it produces money. Will you say this is a transformative land use practice?*

Dr. BKT: I think you are still sitting on 2004 Shillong Declaration on shifting cultivation. I thoroughly disagree with your view. Again, we are going into the same thing. All I am saying is that I am not against the long-cycle traditional shifting cultivation in those areas where ecological conditions are still favorable for continuing with the practice. Our concern is about the distorted shifting cultivation, which is now widespread across the region, where fallow cycle has at times reduced to just two to three years, making it totally unsuitable, both ecologically and economically speaking. Because no ecology can work if you totally ignore economics, at least on a short-term basis. I know quite well ecology has to be

if you ignore economy, even at the cost of short-term ecology, the present generation may not survive. Therefore, we will have to consider the present generation first, and then only can think of the next generation

considered from a long-term perspective; but I am saying, if you ignore economy, even at the cost of short-term ecology, the present generation may not survive. Therefore, we will have to consider the present generation first, and then only can think of the next generation. My view is that, let's not disturb the shifting cultivation in those pockets where long-cycle fallow is possible, but where the system has already broken down and it has become totally distorted, it is better to stop it and think of better options. That's my

argument.

GO: *Let's now come to the last question - the future of shifting cultivation and the new initiatives for transforming the shifting cultivation that led to formulation of the NITI Aayog report on Shifting cultivation. What were the key proposals made in the NITI Aayog report?*

Dr. BKT: We should not jump into the NITI Aayog report, which was preceded with so many task forces set up by various departments from time to time. I don't remember all the points, but a few important recommendations were: (i) One major issue was lack of data about shifting cultivation in the northeastern region, such as, how many families are there depending on shifting cultivation, how much area is under shifting cultivation and the nature of changes for example, in cropping pattern, crop selection, crop intensity taking place in the shifting cultivation areas etc., - all this is a grey area. So, the report has recommended for creation of reliable and authentic data on shifting cultivation. The other major recommendation that I can remember is shifting cultivation is an agricultural practice where the farmers cultivate a piece of land for growing food crops. The land belongs to people. No forest land is generally involved in shifting cultivation. The interstitial period between two cropping, the fallow period is meant for regeneration of the soil. During this period the forest or forest like vegetation develops. So, the NITI Aayog report recommends that the subject of shifting cultivation should be dealt by the Ministry of Agriculture.

The notion of 'agriculture on forest land' should be done away with and the government should accept that it is 'forest on agricultural land' for a short period of time during fallow period. Considering the impact of infrastructure and socio-economic development on the extent of shifting cultivation, the NITI Aayog report recommended that the areas where shifting cultivation is prevalent should be prioritized for construction of roads, and improvement in schools and medical facilities. Another important aspect I forgot to mention. The forest department in their biennial report on forest cover claim all shifting cultivation fallows as forest, which is essentially a fallow on agricultural field. On one hand they say one of the major causes of reduction in forest cover is shifting cultivation; in every FSI report shifting cultivation is accused of causing depletion in forest areas in north east India, on the other side, in the same report, all those shifting cultivation areas where fallows have developed into forest are claimed as forest area. Otherwise, how can you expect that Meghalaya has still 76 per cent forest cover! Actually, not more than 40 per cent of total land is under forest in Meghalaya if shifting cultivation fallows and tree crop plantations are not considered as forest. Even tea plantations are included as forest cover.

GO: Was there any recommendation on specific support system for the shifting cultivators to enable them to make better transition?

Dr. BKT: Well, various donor-driven projects in the shifting cultivation areas implemented in the past decades were analyzed and their impact on the lives of shifting cultivators were documented. On the basis of these, recommendations were made in a table form, like, what action should be taken by which department has been clearly stated. And it was the responsibility of the NITI Aayog to provide direction to the departments concerned.

***the NITI Aayog
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Agriculture***

GO: So, what was the follow up of the NITI Aayog report?

Dr. BKT: Well, the report is still there. The NITI Aayog, as I learnt, had sent the report to departments for their comments and suggestions. What inputs have been received from the related departments is not known. But what I have learnt from various sources that the report did not get much support from some departments. At this point, all I can say, it is as good as a 'dead document'. Only thing that is happening is that many researchers are referring to this report in

their publications. That's all.

GO: What would we lose if shifting cultivation dies its natural death?

Dr. BKT: What we are going to lose is the agrobiodiversity and some agriculture-related indigenous knowledge, which is there with the people. Because once you stop this practice, the knowledge associated with this practice will be lost forever. So, these are two major things we are going to lose. But if you think of economics in terms of loss and benefit, and if you read the global history of Europe and America and other developed countries, they had destroyed a considerable part of their natural wealth at one point of time. Now they are trying to restore what is left. It's not necessary that we should follow that model of development. But we have to accept the process of change, it is happening everywhere. My conclusion is that change is a law of nature. If shifting cultivation does not offer the kind of life people wish to live, it will die naturally. What I see happening in Nagaland, Meghalaya and Mizoram, the states I know better, is that life style of people are changing; people are moving to urban centers, abandoning their villages, though retaining their possession of land by planting commercial timbers or fruit trees etc., in pursuit of decent modern life. For that reason, I will not be surprised in near future if one has to search for a shifting cultivation plot with binoculars. We will have to accept that change. ■

‘We Need a Holistic View on *Jhum*’

says *Dr. Ashiho Mao*, Director, Botanical Survey of India, Kolkata

GO: *One of the contentious issues in upland areas of the region is shifting cultivation, which is always blamed for forest degradation. But it is also evident that biodiversity is very rich in the shifting cultivation area. What’s your take on this?*

Dr Mao: It is easy to blame the villagers who practice shifting cultivation. Of course, shifting cultivation is changing as time passes. In olden days, the population was less, there was not much impact on the land or forest. It is not meant for commercial purposes, they don’t grow any commercial crops, but grow things for the sustenance of their families. But with modernization, they have also realized that shifting cultivation will not give them enough income, and therefore, they are now growing those crops which they can sell in the market. And not only that, the population has also increased, and as a result the fallow cycle has reduced drastically, which is impacting the soil health and biodiversity. But still, it is much better than the monoculture like rubber, palm oil, areca nut etc., which are being promoted for profit. These practices are destroying biodiversity and other environmental aspects.

In an ecosystem every plant or animal plays a very important role. So, if we remove or suppress them, the chain in the ecosystem is broken, and the fall out is immense. The interdependence and interplay of plants and insects and other living organism in an ecosystem is critical in nature. When wild fruit or flowering plants go, other insects and birds also get affected and thus, the ecosystem breaks down. Many plants depend on insects for pollination, and that’s the biggest loss. Another aspect of monoculture plantation is its dependence on fertilizer and pesticide for controlling pests and increasing productivity. That leads to pollution of soil and water, all sorts of things come along with monoculture plantation. In Malaysia, we know how large forest areas were destroyed for oil palm plantation in the 60s and 70s. Kilometers after kilometers one would see oil palm plantation. All these areas were once having thick tropical forest. Even though there is profit in it, they are now realizing the impact of monoculture on environment. They were also growing rubber but they are now abandoning all



Dr. Ashiho A Mao, Director, Botanical Survey of India

this. And most importantly, everybody is not getting benefit from the large-scale plantation; only a few rich people and a few big multinational companies are profiting from this.

So, we need to look at this in a holistic way. For the northeast, we need to think how best we can use our bioresources by setting up community-based small enterprises and cottage industries, where villagers can benefit. We need to train and empower them as to how to use these bioresources available in their respective areas for economic benefit, as well as their conservation for meeting future needs. If we look at Thailand, China they are making various products based on their bioresources, especially in herbal and aromatic sectors. But though we in the northeast are very rich in bioresources, we have not been able to do anything. We have so many aromatic plants in the wild, rhizomes and leaves, no one is thinking about utilizing them and creating business and enterprise. Everybody is going after government jobs.

Besides, in shifting cultivation area, villagers grow many crops, vegetables and useful plants, which are very good for environment. About 20 to 30 varieties of crops, cereals, pulses, tuber and leguminous plants

are cultivated together in a single plot. This is mixed cropping and good for environment.

GO: If there is such merit in the jhum system, why do you think the so-called experts want it to be replaced with sedentary monocultural activities like rubber, areca nut, palm oil etc.?

Perhaps the problem is that shifting cultivation does not fetch enough money, which is important for raising the quality of life. The system does not help bring revenue for the state and the country as a whole. They want the farmers to grow commercial crops and join the market economy. The state thinks that way. Frankly speaking, by doing shifting cultivation no one becomes rich and bring revenue to the state. It is also a fact that the younger generation now does not want to live the traditional way their elders lived due to the impact of modern education and material achievement; everyone wants to earn a lot of money and become rich or economically better off. The *jhumias* also want that, if they get such opportunities.

Looking at the future, ultimately everyone has to adopt settled cultivation - in a way that is good for environment - and sustainable livelihood by taking up organic farming or other integrated farming system. But unfortunately, shifting cultivators do not get adequate support from the government or businesses to improve their economic conditions. They need training in new agro-technologies, finance and learn to work with market forces. That is where investment is needed, but not available.

The other side of modern life is that everyone is thinking about his or her benefit now, and not at all thinking about the future. We have become so materialistic, so greedy; everybody wants nice smart phones, nice car, not satisfied with whatever one can afford. Our human greed is unlimited. Therefore, unless we adopt a simpler life, having basic material comfort of life, it will be very difficult to rejuvenate nature, which is the source of all life forms on the Earth.

GO: Let me then ask you: what if shifting cultivation eventually dies, what are we going to lose?

The (jhum) system does not help bring revenue for the state and the country as a whole. They want the farmers to grow commercial crops and join the market economy. The state thinks that way

Dr. Mao: As I said earlier, if we go for cash crop or monoculture, we are going to lose biodiversity and the impact will be very high. At the same time, shifting cultivation also can be very bad if the fallow cycle shortens below five years, and keep on encroaching the primary forest, which so far remained untouched.

GO: I have not come across any shifting cultivation areas,

which happens inside primary forest, most of the jhum is carried out in secondary forest...

Dr. Mao: My point is: if shifting cultivation is done sustainably within a certain demarcated landscape with a longer fallow cycle, and not encroaching into reserve or primary forest, then the system is good enough for people to ensure food and nutritional security, along with conservation of critical catchment and primary forest that will also provide people with various non-timber products and ecosystem services – especially the provision of clean air and water. Shifting cultivation is going on for generations, which carry ancestral knowledge of food production, conservation of seeds and farm management. It has exhibited great resilience and improvisation in terms of crop selection and soil nutrient management. The only problem now is that because of the shortening of the fallow cycle, nature does not find enough time for reclaiming the soil health.

Another important aspect of shifting cultivation is the conservation of native seeds and maintenance of genetic diversity. Today, with the advent and introduction of hybrid and genetically modified high-yielding varieties of commercial crops, the indigenous crop plants are neglected, and in many places many of the traditional, indigenous varieties are not found. Because these seed varieties are low-yielding and do not look attractive, the agriculture and allied departments are responsible for such neglect of the indigenous varieties and introducing hybrid varieties, and wiping out all the indigenous varieties, which our forefathers were conserving and using for generations.

The advantage of these native crops is that they are resilient to climate change and resistant to pest attacks. But the HYV crops cannot tolerate any kind

of climate change and they require chemical fertilizer and pesticide and all that. If you don't use them, they will not grow well. So, by indiscriminate use of chemical fertilizer and pesticides we are destroying the environment. We know much of what we consume - vegetables and fruits - all have residual pesticide and chemicals, which are causing cancer and many other medical problems.

But those who are practicing traditional farming, they don't have to depend on external inputs; they are also resistant to climate change and pest infection and that is why their preservation and conservation become so important now in the context of climate change. Scientists are now exploring ways to extract genetic materials from those native seeds, which are tolerant to pest and extreme weather conditions. Those novel genes can be inserted into the commercial

varieties. That's why the native seeds play a very important role in developing new varieties to meet any future challenges. The Government of India also realized the importance of the indigenous crops and preservation of their germ plasms, and it is encouraging local farmers to cultivate those crops with awards and other incentives. Plant genome saviour award is given to farmers who are growing native varieties and conserving them by the Ministry of Agriculture and Farmers Welfare.

In November 2021, indigenous communities from Assam have received two awards – *Plant Genome Saviour Community Award* for Dhonsuri Agril farmer Cooperative Society of Karbi tribe and *Plant Genome Saviour Farmer Award* for Mr. Boloram Sorongsa (Dimasa tribe) - for the first time for their contribution to agrobiodiversity conservation. ■

Long-cycle *Jhum* Promotes Biodiversity, Supports Wildlife & Adaptation to CC

*Hardcore conservationists generally decry shifting cultivation as one of the principal factors for deforestation and fragmentation of wildlife habitats and want it to be removed from the forest landscape. However, from their field experience, **Dr. Firoz Ahmed** (Head, Tiger Research and Conservation Division, Aaranyak) and **Jayanta Kumar Sarma** (Senior Programme Associate- NRMP) believe that wildlife conservationists can work with the shifting cultivators to help improve conservation of wildlife as well as the livelihood of the indigenous communities, sharing a landscape*

What, according to you, are the effects of shifting cultivation on wildlife conservation in the region?

We strongly believe *Jhum* or shifting cultivation is an integral part of life and culture of the indigenous communities of the region living in the hills. This traditional farming system of the upland communities

CONSERVATIONISTS' VIEW



Dr. Ahmed (L) and Sarma

may have least impact on ecosystem when *jhum* plot cycles are longer, say about 20-30 yrs or more. *Jhum* also protects a large array of agrobiodiversity and may hold answers for climate adaptations in future. However, the *jhum* cycle is becoming shorter in the region with more demand for food and cash due to increase in the population and change in lifestyle of the practicing families. In some places, the *jhum* cycle has reduced to two-three years, which may adversely affect the ecosystem and wildlife habitats.

Frequent or short *jhum* cycle prevents ecosystem (microbes and trees) to bounce back by repeated 'shock' to its physical and biological activities and thereby favouring only the species that can take advantage of such 'shocks' to other flora and fauna. We have observed bamboo proliferating naturally in frequently used *jhum* cultivation area, eliminating other trees and flora from the fallows.

The primary forests are high in biodiversity and are important for mankind and other flora and fauna. The slash and burn cultivation stops carbon trapping ability of the forest as it needs to be razed. This also results in topsoil erosion and prolongs soil and forest regeneration. The top soil holds valuable humous and minerals that support soil microbes and regeneration of forests.

However, according to traditional knowledge and observations, *jhum* creates secondary vegetation that is preferred by herbivores like elephants, sambar and gaur and thus help to coexist. Although this is true to science, it is not known how such species and human will react if *jhum* is not practiced in entirety, given that *jhum* is so discouraged.

At the landscape level, how do you view *jhum* in terms of wildlife habitat management and conservation of biodiversity?

The landscape is not uniform and can never be due to cultural, topographical and ecological diversity. Therefore, planning conservation in a landscape scale, understanding the intricate relationships among its elements, including biodiversity, culture and livelihoods, are not just essential but can not be missed. It is important to note that at the landscape level, community practices have both similarities and dissimilarities; similarity may be in the process of *jhum* practices but there are dissimilarities in spatial location, altitude, slope aspects as well as cultural and institutional approaches, and local food preferences.

Therefore, in a landscape, *jhum* can still be relevant provided there are more income opportunities to sustain families and also fulfil their aspirations. We at *Aaranyak* are piloting a participatory research (at a very initial stage) that seeks to restore *jhum* fallows to forest in a way by which the soil is also reclaimed

naturally within short period of time and the land is made more productive by modification of land use. The idea is to expand the *jhum* cycle upto 20 to 30 years on one hand and reduce the *jhum* area by better land use choices that provide sustainable livelihood options for the *jhum* farmers, on the other. To achieve this, we are promoting another traditional solutions, which is Homestead Agroforestry.

Homestead in Northeast is a traditional practice of agroforestry, variedly known as *Bari* in Assamese, *Hembiri* in Karbi, *Nolaihaphai* in Dimasa, *Intathingri* in Singpho, *Shong* in Jaintia/Pnar, and so on. It is a repository of endemic species of timber, fruit trees, medicinal, herbs and vegetables species or varieties supporting the need of a household. The homestead garden is also a habitat for many birds, small mammals, amphibians, etc. Such a system needs to be supported with appropriate policy and guidelines. In

the Norpuh, Nongkhylem and Balpakram landscapes of Meghalaya our study could document more than 100 endemic species or varieties within village areas. We must focus on such natural heritage, which is embedded in our cultural system.

What needs to be done to protect wildlife and biodiversity in *jhum* landscapes, which form part of the KarbiAnglong-Kaziranga landscape, Nokrek and Balpakram in Garo Hills?

Well, we need to do the following: (i) Restore as much *jhum* fallows as possible to revive soil, forest and ecosystems. This will also rejuvenate our rivers and moderate monsoon flood by holding water within the forest in a river basin; (ii) Promote agroforestry as well as other alternative and sustainable livelihoods to increase self-sustainability of the communities; (iii) Not falling into the trap of market force, though very hard, like oil palm, exotic timber species, etc. is very crucial. For that mass education, awareness and sensitization are necessary, which is a huge task to achieve though, but must be accelerated; and (iv) Need to conduct participatory action research with the indigenous people and local communities to develop suitable landscape and localtion-specific alternative models, by using local traditional knowledge and modern science and technology to improve their lives as well as the natural environment. ■



Jhum fields are like ‘crop cafeteria’!

But the jhum system has to be made more productive and sustainable, using its inherent possibilities, opines Dr. K.M Bujarbaruah

GO: What, according to you are the critical issues in the hill agriculture?

Dr. KMB: Hill agricultural issues are different for differently placed hill eco-systems – say for example, the issues for Western and Eastern Himalayas are different. In so far as the Eastern Himalayan region is concerned, the major issues are relative inaccessibility, marginality, fragility, undulating topography, quality seed (crop, animal, fishes etc) and planting material, monocropping, very limited farm mechanization, processing and market linkage etc. In addition to these and other related issues, shifting cultivation (slash and burn method of agriculture) is yet another issue of concern more particularly because of opinions for and against it. The issues are also that of low productivity, Complex, Diverse and Resource or Risk-prone (CDR) agriculture.

Recently, there was a meeting organized by the National Academy of Agricultural Sciences. The topic was, agriculture under a harsh environment, including the marginalized lands, right from the flood-prone area to the draught hit regions, to hill agriculture to alpine agriculture across the globe. The basic idea was that the land is shrinking and the global population is projected to be nine billion by 2050 where we will have to produce food for the nine billion plus people. Presently, we are producing food for about seven billion people. Now, to produce the extra food for the remaining two-three billion people, the currently available land will not be sufficient even if we have entered into vertical mode of agriculture. So, can we access lands which are marginal and those under harsh condition, including shifting cultivation? The challenge is how best we can bring those areas under the production fold in a systematic way without disturbing much the traditional way of practicing shifting cultivation and tested farming system approach.

Besides, we have to accept that the Northeast agriculture is different from the mainland agriculture; we do not have much commercial (industrial) agriculture here excepting some in Assam and parts of Arunachal Pradesh, Sikkim etc. This disadvantage of not having commercial agriculture may perhaps be



Dr. K.M Bujarbaruah, Vice President, National Academy of Agricultural Science, New Delhi & Former Vice Chancellor of AAU, and former Director, ICAR-NER

counter balanced with a specialty kind of agriculture (niche), which is that of organic or natural farming in commercial mode. Our entire shifting cultivation belt and products can be instantly certified as ‘naturally grown’ increasing thereby the country’s area under natural farming. Natural farming does not mean that you have to produce rice and wheat only. All our crops from rice to cucumber to leafy vegetables and yams etc. grown under natural farming system can be so certified.

GO: The ICAR-NER was set up to study shifting cultivation but little seems to have done to

understand the science of the ancient farming system and the indigenous farmers' practice...

Dr. KMB: I think when you say 'ancient system', you mean shifting cultivation. Yes, one of the major objectives behind establishment of ICAR Research Complex in 1975 was the issue of shifting cultivation (SC) as the areas under SC then was quite large. The institute did study the system but, yes again, there was perhaps not enough in-depth study to measure the eco-system services being rendered by the SC system. The study, may be rightfully, later on was focused on improving the system through alternative farming system approach to food production. I said rightfully, because of the negative impact the SC system was creating on downstream agricultural resource base, more particularly on the river beds. That notwithstanding, I personally agree that the SC system which has withstood the test of time and still is under practice goes on to indicate that the eco-system people inhabiting in the SC areas and practicing it were convinced about the positive contribution of the system towards natural fertility and bio-resource regeneration for production system sustainability. A time has come that the issue is discussed once again at the top level, may be under the Ministry of DoNER, Government of India to draw up a pragmatic roadmap with a time frame involving multi-stakeholders. Before that the study reports available thus far on Farming Systems have to be collected and collated.

GO: *NITI Aayog came up with a document in 2018 on the Shifting Cultivation, but regrettably, after the release of the document nothing seem to have happened!*

Dr. KMB: Well, the very fact that NITI Aayog had come up with that program in itself is an acknowledgement of the SC system and that it needs a transformation as any other system today. Right now, I do not have the details on that proposal specially on its further progress. The program has to be attached with an institution which has experience of working in that area – say for example, the ICAR Research Complex for NEH Region or the North Eastern Hill University and then draw up an action plan with budgetary and manpower requirement etc. Perception of the shifting cultivators will be very crucial and vital and their inputs and wisdom must form the basis of such transformation. Again it is not the crops alone (rice, millets etc) but the cultivars and farm-bred varieties of these crops that are of interest as they are believed to carry a gene pool which might provide the very basic foundation for stress resilient crop breeding. The diversified crops that are grown in SC 'crop cafeteria' purely on organic mode, could also

become a highly valuable material for organic seed production and the farmers could become organic seed producers and suppliers leading to the formation of a seed company. What probably we need is a massive restoration initiative of the system followed by capacity building in areas like eco-system services, organic seed production, nutri-sensitive agriculture, FPC formation with linkage with national and global players engaged in nature friendly agriculture.

GO: *Jhum fire is often cited as an act that causes carbon emission, but if one takes up another economic activity like brickfields which are burnt for days, weeks after weeks, but we are allowing this because there is profit in it...*

Dr. KMB: See, some of these are the issues, which have to be really researched upon. For example, the belief that burning will lead to carbon emission has to be scientifically validated by measuring as to what amount of carbon is emitted by this burning (once a year) and compare them with the amount of carbon emitted by tractorisation of similar area elsewhere. It is reported that a liter of diesel burnt can emit around two Kg of carbon dioxide. Together with this assessment, we have also to take into consideration the benefit of addition of ash to the crop fields due to this burning. Economically, it is the savings in labor component as well. All these benefit-loss aspects will have to be worked upon and placed for proper planning.

Further, you can probably no longer say that agriculture is not for profit. Yes, it is for profit but not at the cost of food quality. In many places in the world today including our own country agriculture, animal husbandry and fisheries have become factory farming with technologies ranging from climate neutral space, hydro-aeroponics (soil less) to the use of sensors and other artificial intelligence tools and techniques. You have to weigh shifting cultivation in the light of these development and accordingly transform the system for continued stability and sustainability. The technological intervention needed at each touch point of the farming activities (forest clearance, burning etc) will have to be assessed and intervention executed to facilitate the overall system from pre-cleaning to harvesting, post-harvest handling and onward marketing of the produce.

GO: *Ironically, the shifting cultivators had never had access to all these vital support system*

Dr. KMB: Actually, to my knowledge, the focus of different schemes were on shifting cultivation and not on shifting cultivators per se which is why, many a

times, they were left out of the support system although the major aims of these schemes were to improve upon their livelihoods by way of bringing in improvement in the SC production system. Now, as I said before, the perspective of the shifting cultivators has to be brought on board and action-agenda framed, keeping in view the interest of the farmers and the farming system followed by them. The continued relevancy of the system as they exist has also to be assessed and recorded. In fact, some NGOs/ organizations/ individuals working in this field for ages have to be assigned this job with government and institutional support.

GO: *Jhum system is not meant for market, it's aimed at ensuring families food security, producing for family consumption...*

Dr. KMB: Today's challenge is, in addition to becoming self-sufficient in food production for the family, one has to find source of cash income by producing surplus or cultivating cash crops to pay for education and health care, as well as fulfilling other material needs of their dependents. Yes, earlier the system was for meeting the food requirements of the community, as other means of accessing food was not available due mainly to the inaccessibility of the SC areas, absence of regular food markets and so on. But today the scenario has changed, which is why I have already spoken about digital marketing and all that.

GO: *That is where the role of science and technology comes, that is where financial allocations are needed*

Dr. KMB: Yes, exactly. The farm sector, in addition to their current efforts to improve productivity and developing stress-countering technologies, methods and methodologies, tools and techniques, will have to focus also on technologically backstopping the agriculture in harsh and marginalized lands, including the SC areas not only for increase of productivity but also for generating agri-energy converting the bio-wastes into bio-wealth. In order to take the things forward, you need to frame an all-encompassing research-cum-development project on shifting cultivation engaging the expertise and foresight of established institutions in the region

we have to try to bring marginalized lands into our agricultural production system, particularly in the northeast region. We have to retain our kind of agricultural, which is by and large free of chemical fertilizer

taking steps and adapting to the market forces.

Dr. KMB: Yes, I am aware of the farmers continued pursuit of the system which is why it is important to have a complete policy on shifting cultivation. However, to my knowledge, palm oil, areca nut etc has not been cultivated in *jhum* land so far. Rubber plantation of course has covered a large area of *tilla* land in Tripura. The question is how do we see SC 10-15 years down the line, particularly when land resource is shrinking and all powers that be, are keeping an eye on the fallow lands. The tag of war will be between this group and the positive side of SC system which have to be documented, as I said before.

In my view, we have to try to bring marginalized lands into our agricultural production system, particularly in the northeast region. We have to retain our kind of agriculture, which is by and large free of chemical fertilizer. So, we can go for 100 percent organic mode of agriculture in mid-hill areas, which is around 40 percent of total area and select and document the high hill areas where SC is practiced, for natural farming. The value of SC like system will have to be increased by growing bio-fortified crops, crops with functional food attributes and all that.

We have missed the green revolution bus, however, the silver lining is the opportunity to triple the production through appropriate policy-technology and development initiatives, particularly in the direction of organic agriculture or natural farming and making the shifting cultivation practices income oriented with the incorporation of energy capturing technologies like harnessing of solar power and selling it to various grids, trading of captured carbon as well as scientific exploration of underground biota (bacteria, fungi etc.) for environmental stress countering genes. But for all that, we need a clear road map. ■

and submit the same to, say NITI Aayog. This actually should be the outcome of the proposed deliberations involving the Ministry of DoNER, as said before.

GO: *But that may take time and farmers can't wait. They understand what they need to do, they know they have to produce something which has market, and accordingly, they are*

Traditional Ecological Knowledge A Vital Tool for Rebuilding *Jhum* Landscapes

Jhum, widely practiced by hundreds of diverse ethnic communities, has shaped a mosaic of bio-cultural landscapes across the uplands of India's northeastern region. This was a result of their constant interaction with the surrounding natural environment in which they lived and managed to sustain their lives by wise use of the available resources that they had found to be useful. These diverse traditional ecological knowledge (TEK) of these communities regulated their activities in a given landscape, and helped develop complex landscape management and conservation practices over a long period of cohabitation amidst nature.

This is what perhaps struck him most when Prof. P.S Ramakrishnan, a reknowned ecologist, began his research on *jhum* at the newly established Northeastern Hill University (NEHU), Shillong in the mid-70s. He introduced what he called, a 'socio-ecological systems' based approach to research on the upland farming systems of the region, and after two decades of studies, which included the years of pioneering research, funded under the UNESCO's Man and Biosphere (MAB) program, the research team he headed, produced two valuable synthesis documents: (i) *Shifting Agriculture and Sustainable Development: An Interdisciplinary Study from North-Eastern India* (1992), and (ii) *Shifting Agriculture and Sustainable Development of North-Eastern India: Tradition in Transition* (2006).

The studies pointed out that the shifting cultivators, "who have always managed to live in harmony with nature" are now vulnerable to the consequences of degrading environment

due to the growing demands on natural resources for economic development. New land use interventions driven by market forces interfered with the *jhum* fallow cycle management system.

"The livelihood concerns of the mountain societies is closely linked with sustainability of the landscape as a whole, and that the sustainability of *jhum* cannot be seen in isolation, but as part of a larger landscape management plan," the studies concluded.

It was further observed that the traditional mountain farmers are "more concerned with: (a) local production-based food self-sufficiency, (b) low input/organic traditional agro-ecosystems for food security, (c) environmentally benign pathways for developing landuse practices such as through improved management of *jhum* fallows, and (d) diversification of economic avenues for coping with environmental uncertainties and risk avoidance."

Therefore, there is "the urgency now to redevelop the largely fractured landscapes of the region" in a way that addresses their concerns for sustainable livelihood, which, if remains unattended to, may have "serious implications for human security in the region".

Prof. Ramakrishnan believes that the traditional ecological knowledge which sustained traditional communities for centuries are still available, which can play a vital role, along with the support of formal scientific knowledge, in redeveloping the *jhum* landscape.

Grassroots Options is reproducing the interview it had with Prof. Ramakrishnan decades ago (winter-spring issue, 2002/03), as his views remain still relevant. ■



Replacing *Jhum* ? No Way, Build on It !

Prof. Ramakrishnan, despite decades of efforts to contain jhum, it's still continuing and even increasing, why?

The *jhum* is continuing largely because there is no alternative technology in place, which is in agreement with the socio-ecological situation of the region. However, the *jhum* system has fallen into difficulties in recent times not because of the jhumias, but because of the external pressures on the natural resources in the region for the last 200 years. For example, deforestation due to vigorous extraction of timber to meet the war needs during the British rule, and later during the post independent years. Now, when you take away the natural resource base of the

people because of your needs elsewhere, and then you are not giving them an alternative technology for them by which they can do something, which is ecologically and socially benign, they have no other choice except to fall back upon the degraded forest that they have got. The degradation has been so severe that there is no resource left for them to do their *jhum* properly. The scientific community also has not been able to provide any alternative solution to their problem, which is acceptable to the communities, and therefore, people have no other choice but to continue with *jhum*, in whatever distorted form it may be. The important issue here is what are the right kind of choices that we can offer to them.

You have pioneered studies on jhum systems in the region. Is jhum really bad?

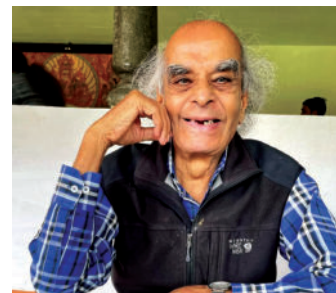
For practicing *jhum*, first of all, you need a rich natural resource base and that was available for the communities here for a long time until the external pressures started, deforesting the region. At certain point of time, the system started breaking down because the resource base was not available. Now within the ecological base, that is available, I believe they are still doing a good job for themselves. If *jhumias* have been responsible for some land degradation, it is because we have left with them a little base for them to do their *jhum*. The chief driver of change in this region, I believe is the external pressure that has been operating in the area. And to talk about whether *jhum* was a good practice or not, earlier, it was based upon rich traditional knowledge, and we have tried to validate much of this traditional ecological knowledge available to the communities and relate it to the formal knowledge system that all of us have been brought up with – the western way of looking at things, validating hypotheses. What is important is, one, traditional ecological knowledge should get the place that is due to it, which has not been accorded. In my opinion, there is a rich space available within the existing agricultural system. Secondly, not necessarily all the traditional ecological knowledge may be good, and therefore, we need to validate the traditional ecological knowledge through empirical analysis, which the scientific community is used to, and then integrate into the formal knowledge.

Do you suggest that the policy response to jhum has been inadequate so far?

I used to ask many a policy maker and planner, not today but 20 years ago, that can you get rid of *jhum* in the next five or 10 years? If the answer is 'no', which is the most obvious answer, you have no other choice except for building upon the *jhum*. If I were to go to people with a strategy to improve their quality of life, I will never start with a statement that you discard your *jhum* and do something else. You will have to follow a strategy of building up step by step. And to do that, I will start with their traditional ecological knowledge that the communities are familiar with and see whether any modification is required or not to improve the cropping systems. I will consider introducing formal knowledge into their system only when I see that the community is receptive enough to accept a little bit of formal knowledge into their works. For example, burning of forests. Why do they burn? They burn because they want to add fertility to the soil in the form of ash. But that fertilizer can be built up and they will realize that the soil fertility can be maintained in a manner that does not require burning. But that thinking process has to come from the community rather than being told to them from outside.

Communities living around the forest often ask why they need to change, and not others who live in urban areas. How do you respond to that?

I will not ask them at all; that is a very wrong approach. We are dealing with a community, which is accustomed to live close to nature and natural resources. What is the reason why we want them to change because, having something certain degree of empathy for these communities, we feel that communities deserve much more than what they are able to get with all the labour that they are putting into their agricultural system. So, that is the reason why I would like to see the change happen. But that change can not be at the cost of disrupting the community itself. The change has to be in agreement with the value systems that the community cherishes, and a kind



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of an agreement with the socio-cultural and socio-economic perceptions that the local communities have. That need to be taken on board in order to be able to do some development for them.

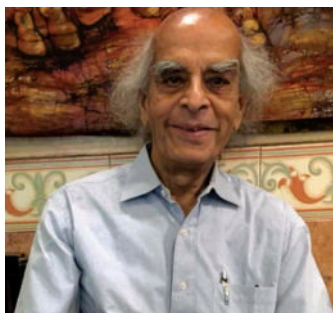
Is this approach being tried anywhere?

Well, it took me about 18 years in order to be able to see a meaningful project emerging out of that philosophy, which I had been talking in the media or wherever I had an opportunity – in the government committees and discussion group meetings – for quite some time. And that project was the NEPED initiative in Nagaland, which came under the Indo-Canadian Environmental Facility programme, even though the donors were a bit reluctant for a whole variety of reasons. However, I had a small hand in seeing that the experiment takes off. That experiment has started and is being tried as a model in Nagaland.

What has been the fate of the Project?

Well, as a distant observer – I was involved only at the initial stages of the NEPED project when it was operationalized – I would like to state only two things: One of the things I have been saying right from the beginning as a member of the advisory committee is that it is extremely important to monitor what is happening on a day-to-day basis. I even volunteered to trying to create an association of Naga farmers, train them to monitor the progress on the ground, record them on papers and then publish the findings so that all the stakeholders – the people of Nagaland, the state and central government officials, the scientific community and the donors – get to know what is happening. Unfortunately, the documentation that has been done so far is a very generalized kind of information; there is no reference to analysis. But despite this limitation, I would say the NEPED project is a very interesting scientific experiment and even if it gets 25 per cent success, I would consider it to be a big achievement. Secondly, I have been told by a number of people that the NEPED is now concentrating in a few villages and diversifying their activities to a few selected places, plots and situations. Initially, the targets were about 1200 villages, but now I am told, they have narrowed down to a more manageable number. They are also trying to link their activities with marketing etc., and develop small-scale entrepreneurship based upon the local natural resource base and ecological situations. This is a process, which has begun to address the economic and ecological problems associated with *jhum*.

Jhum farmers are gradually being exposed to the uncertain market forces. And so, you have scheme for tea, coffee and all kinds of offers to the communities. But will these really help improve their lives?



I will never recommend introducing tea, coffee, cashew etc., straight away to the *jhum* fields. This will bring disaster to the communities. Before introducing anything like this, there should be sufficient scientific ground creations. For example, we know tea grows very well in Darjeeling and Assam, but we still do not know whether cashew nut introduced in the Garo hills is going to be a success or not. All that I know is cashew nut growing there is of poor quality, which may be locally consumed but it is unlikely to change the economy of the community in a major way. Secondly, as I said earlier, we should not think of replacing the *jhum*; we need to build on it. Thirdly, *jhum* is not the only area where intervention can be made. There are other areas such as home gardens, which are all packed with economic and medicinal plants and herbs, which can be used for raising their income. ■

Don't Throw the Baby with Bathwater

For decades, *jhum* has been despised as a harmful farming system practiced across the eastern Himalayan region. The activities involved in *Jhum* or the shifting cultivation or swidden agriculture - 'slashing, burning, shifting' - have often been viewed as highly destructive, giving rise to a negative impression of the practice. Ironically, while the government always blamed shifting cultivation for loss of forest, biodiversity, and land degradation, it allowed diversion of large tracts of forest for building dams, mining and massive infrastructure development, ignoring their devastating impacts on forest, wildlife, biodiversity and over all environment.

The 'slash and burn' (used for clearing and preparing the farm bed for sowing crops) is only a very tiny component of the whole farming system in the short period of cropping phase. But how a burned and denuded patch of farmland is transformed, following the sowing of seeds of variety of crops (as explained in the photo essay), into a luxuriant food garden, goes unnoticed.

Researchers from across the tropical forest and sub-tropical forest regions of Asia, central Africa and South America where swidden agriculture is a dominant land use practice, have produced sufficient evidences to prove that the indigenous farming systems 'maintain very high levels of biodiversity', while ensuring food and nutrition security as well as 'providing livelihood for populations in tropical forest areas'.

Perhaps we need a new lens to view this indigenous food growing culture in the uplands and understand its complexities. Instead of perpetuating this negative perception of 'slash and burn' cycle and the policy objective of getting rid of the 'primitive, wasteful and

The government is not interested in *jhum* simply because it does not produce much for markets and earn revenue for the State, and hence, *jhum* has to be replaced with cash crops!

low-yielding farming system', attention must be directed to its fallow forest management system, which has inbuilt potential for conservation of soil, water, forest, and biodiversity.

Jhum or not to *jhum* is no more the question! The question is do we have the political will to act on what have been suggested most recently in the NITI Aayog Report, '*Shifting Cultivation: Towards a Transformative Approach?*' The document, released in 2018, recommended a host of measures, especially bringing

the shifting cultivation areas under the natural farming system. The problem is: there is lack of real data related to the exact number of households solely or partly involved in Shifting cultivation or the areas under *jhum*, especially in the northeastern region. What exists as data is merely estimation provided in various task force and working group reports on shifting cultivation in the past decades.

It is, therefore, important to carry out a special census on the upland communities practising *jhum* and the shifting cultivation areas in the northeastern region and in other parts of the country where this type of farming is prevalent.

Not only that, the areas where *jhum* is practised, including the fallow lands under various stages of vegetative growth must be recognized, conserved and protected as 'sites of native and indigenous crops, heirloom seeds and food culture'.

Of course, there is now better understanding of *jhum* in India at the policy level, as reflected in the NITI Aayog report, that recognizes the potential of shifting cultivation, especially in the context of climate change mitigation and carbon capture. However, inter-ministerial claims over the *jhum*lands and its resources continue to hinder the process of taking the follow-up actions ■



