Antinomies of Ecology and Scales of Tribal Development in India

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In this article, we extend the idea of tribal ecology outlined in the Introduction to a range of contemporary ethnographic issues. Tribal ecology as an idea helps us to understand both the micro and macro-transformations of the contemporary climate crisis because it provides a window onto histories of ecological knowledge, cultural change, and agroecological adaptation. Tribal communities are often frontline communities in terms of their vulnerability to climate change impacts. They have also been direct subjects of developmental discourses going back to the imperial era. Accordingly, our contributions span multiple fields and epistemic perspectives, including an Indigenous sociological view, historical, anthropological, and the efforts of a Danish NGO (iiINTERest).

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In the first section, antinomies of ecology, we look at the mobilization of divergent ecological discourse for achieving ends such as community formation and contested identity-based claims for reservation quotas. These two polarities exist on a continuum of how ecological discourses are mobilities for both group solidarity and contested state recognition. Our contention is not that tribal communities are uniquely ecological, but that one cannot understand tribal communities without attending to the identitarian work that ecology does. Following Xaxa (2016), until colonial rule and post-Independence management regimes, tribes "were the guardians of the land and forests and enjoyed unrestricted access to the forest and forest resources" -- which speaks to the centrality of land and notional ides of territorialized homeland, even among highly mobile tribal communities. We tease out how tribal ecologies are engaged in the affirmative project of group solidarity vis-a-vis land-based claims, which in turn draw from grounded epistemologies that construct nature as an animating force of

social cohesion. On the other hand, ecological knowledge can act as guarded epistemic knowledge that can exclude communities, including Dalits, who are partially integrated into tribal formations.

In the second section, scales of tribal development, we explore the spatial dichotomy of tribal ecologies rooted in village life versus ongoing processes of urban migration and agrarian settlement extending back to at least the 19th century. We examine how tribal identities change over time and contemporary development practices reconstruct place-based notions of tribal ecologies as forms of knowledge embedded in village life. There is a tendency for development projects like the one included here to purposefully lump together and un-differentiate subaltern village groups, be they Dalit or SC/ST/OBC, under the shared rubric of BPL. Doing so enables subaltern knowledge to become untethered from specifical communal formations, be they caste or tribe, and for ecology to stand in for a more generalized notion of a village or rural epistemology.

Section One: Antinomies of Ecology

Gaddi Ecologies: Adaptive and Discursive

The 1965 Lokur Committee's criteria for recognizing Scheduled Tribes is still operative today. The criteria include primitive traits, distinctive culture, geographical isolation, shyness to be contacted by outsiders, and backwardness. Putting aside the fitness of this criteria, we simply note that, in practice, ecological discourses are frequently mobilized by tribal communities and tribal-aspiring communities. Primitive traits mean a distinctive relationship with nature (such as animism or ritual possession practices such as drinking sheep blood from the neck vein); distinctive culture means traits that are adapted to natural environments or (negatively put) reflective of simple societies in lower states of evolutionary development; and backwardness is reflective of living close to nature and therefore far from civilization.

Because of the demands of tribal recognition, ecological practices shade into ecological performances and discourses aimed at the state. In the case of the Gaddi tribe in the Kangra District of Himachal Pradesh, a multi-decade appeal for ST inclusion hinged on the practice of transhumant pastoralism. While the community has largely transitioned into post-pastoral lifeways, tropes of pastoral mobility, sheep rearing, and ritual sacrifice were maximized as discursive evidence of tribal

identity. As this section explores, ecological practices and discourses can also shade into caste-based exclusionary practices.

Gaddis are the archetypal transhumant pastoralist community of the Western Himalayas, deeply enmeshed in two ecological niches. Gaddi shepherds seasonally traverse the southern spurs of the Dhauladhar Mountains, grazing flocks in highland pastures in the summer and in lowland areas in the winter. Typical pastoral routes circulate between Chamba and Kangra districts in Himachal Pradesh. This paradigmatic image of the Gaddi as pastoralist--intimately tied to the environment, sensitive to climatic changes, dependant on flockwealth and interdependent with non-Gaddi agriculturalists along their pastoral routes--has been a hallmark of both emic heritage branding and etic media portrayals, from colonial Gazetteers to postcolonial scholarship.

I explore how the recent scholarship on Gaddis has both problematized and affirmed, with caveats, such a perspective by focusing on 'tribal ecology' in the context of bifurcated Gaddi scholarship. Some scholars approach Gaddis as primarily *post*-ecological; that is to say, having communally transitioned to non-pastoral vocations, settled in more densely populated cities, and constructed discursive tribal pastoral lifeways in relationship to state reservation quotas and tourist consumption. Other scholars describe the perpetuation of an ecological worldview, inextricable from Gaddi spirituality and pastoral practices that are being pragmatically adapted under conditions of climatic crises and changing economic conditions (Christopher and Phillimore 2023). I argue that Gaddi pastoral adaptations to climate crises are real and meaningful but are not the totality of the story. Pastoralism for Gaddis is a Maussian total fact, shaping everything from national politics, village sociality and heritage performance; it is also a kind of 'occupational religion' to cite Richard Callahan (2021) describing how some vocations, integrally tied to the environment, provide the cultural and experiential grist to shape spirituality. Accordingly, there are several triangulating factors that interplay with the climate crises. Understanding Gaddi perceptions of the environment and pastoral practices (or lack thereof) need to be continuously qualified with important distinctions. Which Gaddi castes? Living in which localities? Accorded which kinds of legal status (for Gaddis span the quotas of Scheduled Caste, Scheduled Tribe, Scheduled Tribe Other and Other Backwards Class)? As we will see, ecological practices are embedded in and recursively reacting to changing sociopolitical contexts.

Essentially all anthropologists working with Gaddis place transhumant pastoralism, real or imagined, at the center of Gaddi cultural practices and notional ideas of tribal homeland (the Fifth Scheduled area of Bharmour). The most recent fieldwork, which builds on previous scholarship on Gaddi pastoralism (see Phillimore 1982; Noble 1987; Saberwal 1999; Axelby 2007; Sheth and Saberwal 2023), analyzes how global warming and climate change are impacting pastoralism routes and economies, leading to pragmatic adaptations by shepherds. Triangulating into shepherding experiences from two ecological zones in Chamba, Axelby and Bulgheroni (2021) analyze the "tenacious" adaptive strategies of Gaddi pastoralists: rearing goats over sheep because they better avoid toxic florae, increasing mini migratory patterns in the winter to maximize ever-dwindling vegetation, and reappraising the landscape itself, with perceived increase in climate-related risk (higher temperatures impacting edible grass, flock health, and physical danger from atypical storm cycles and glacier melt causing landslides. These flexible practices extend to the ethnic reconfiguration of 'Gaddi' shepherds through increased recruitment of non-Gaddi helper shepherds (*puhal*), a practice which is pointing towards a transformation of the caste- and kinship-based practice throughout the region (Malhotra et el. 2021).

For these scholars, ecology is a field of praxis that is interrelated with and changing alongside transformations in state regimes and socioeconomics. Pastoralism is not reduced to the purely economic but treated as primarily socio-ecological (and transformations therefore have functionalist and adaptive characteristics vis-a-vis climate change). Climate impacts emerge from and exacerbate the conditions for vulnerable places (like tribal-reserved areas of the Western Himalayas) and peoples (like tribals), who in turn make situated adaptations which can both reproduce and transform power structures (pace Taylor 205 and Orlove 2009).

The other branch of Gaddi scholarship looks at ecology as a discursive field that is geared towards tribal performance, state recognition and social inclusion (and caste-based exclusions). Rather than summarize the major themes of this literature, I will focus on a few abstracted points from my own work. The point is not to deemphasize the adaptive tenaciousness of Gaddi shepherding in the context of real climate change crises but rather to reframe Gaddis as largely a post-pastoral community and to interrogate how collective practices around pastoralism are primarily discursive, about heritage preservation and performativity, and

inextricable from an ongoing legacy of casteism against Gaddi Dalits (Christopher 2020).

This takes several forms. First, as Gaddi pastoralism has waned and Gaddi youth have become increasingly alienated from nature, there has been a social media movement under the hashtag #radkaat (raṛkāṭ) – 'wanderer'. I explore this in depth elsewhere (Christopher 2020a) as a movement towards escaping urban materialism and rediscovering nature and their heritage as 'wandering' pastoralists. Of course, this rediscovery is discursive, driven by hashtags and the artwork of Kangra artist @BaankiBitti, and the empirical data points to ever diminishing interest in Gaddi youth becoming large scale herders (thus the need for non-Gaddi *puhal* replacements). Second, waning pastoral practices among the 35,000 Gaddis in Jammu is perceived to be due to Islamic militancy and systemic Hindu-Muslim tensions (Christopher 2022). There are no widespread ecological discourses that I am aware of among Gaddis in Jammu; based on fieldwork and interviews with ethnic association leaders, Gaddis feel that political precarity and episodic violence are much more responsible for the loss of shepherding lifeways compared the impact of climate change. Third, pastoralism is the central trope for Gaddi tribal belonging, the key gatekeeping discourse that differentiates 'authentic' Gaddis from the five partially integrated Scheduled Caste Gaddi groups who have a more tenuous purchase on pastoralism (partly because of systemic casteism that barred such groups from pastureland access because of their ritual impurity in sacred places). As pastoralism as a practice has declined, it has been increasingly instrumentalized as a discourse to lobby the state and ultimately to secure Scheduled Tribe status to high-caste Gaddi Rajputs and Bhatt Brahmins in Kangra (while disenfranchising Scheduled Caste Gaddis).

When we speak of Gaddi 'tribal ecologies', we must conceptually balance *both* pastoral adaptations vis-a-vis climate change with the above-described discursive and political instrumentalization of pastoralism for larger practices of communal belonging, youth fantasy and state-reified caste-based discriminations. Doing so places a Julain Steward-style cultural ecology within a sociopolitical terrain of contested positionalities, vulnerabilities and exclusions--both driven by climate change and instigated by intertribal caste politics interacting with environmental transformations.

Tribal Ecologies amidst State and Infrastructure Development in Northeast India

In this section, I highlight how place-specific claims of tribal ecology are enmeshed in the context of state development and infrastructural exclusion. Since tribal ecological knowledge is rooted in specific place-based niches, the disruption and displacement of tribal people from their homeland has dire effects on the communal retention of ecological knowledge. In this sense, ecological discourses can create tribal solidarity in resisting extractive practices and state-led development. This is the counterpoint to the perspective presented above, where tribal ecologies are mobilized to exclude lower castes from ST state recognition.

Tribes in Northeast India have a rich diversity with different languages, traditions, cultures, customs, worldviews, sense of territoriality, boundary, and so on. Amidst these differences, Xaxa (2016) charts out one commonality amongst tribes, i.e., exclusion from many social groupings that have historically, socially, and culturally been associated with India. In this paper, the term 'tribe' has been used not in the definitional sense but as a category opposed to that of caste, a pervasive feature of the larger Indian society (Ziipao 2018). There are as many as 140 tribes in Northeast India, comprising about 27 per cent of the region's total population. As per the 2011 Census of India, with reference to the Northeastern states, Mizoram has the highest proportion of Scheduled Tribe (ST) population within the state at 94.43%, followed by Nagaland (86.47%), Meghalaya (86.14%), Arunachal Pradesh (68.78%), Manipur (35.12%), Sikkim (33.79%), Tripura (31.75%), and Assam (12.44%). It is pertinent to highlight that most of the ecological hotspots are predominantly located in tribal territories of the region. However, the push for mega infrastructure projects that includes dams, trilateral and frontier highways, roads, coal mining, railways, and airports, among others, by the Indian state poses a threat to this rich flora and fauna. For instance, the government of India has commissioned more than 120 hydropower projects to generate 50,000 megawatts of electricity from Northeast India alone and projected the region as a natural economic zone. This aggressive push for hydropower projects and others in a seismic zone III invites an ecological disaster. Here, I argue that besides the developmental imperative, environmental justice needs greater attention from the tribal perspective of development and their intrinsic relationship with nature. The state-led development initiatives in tribal/border areas often bypassed local communities and foreground heavily on security concerns.

During one of my fieldwork visits to the Indo-Myanmar borderland in the Pangsha, the village chairman discussed the ramifications of the international fencing projects. He asserted that:

> They (the nation-states of India and Myanmar) have distorted our foreparents' land and territory. Fencing is an issue, not a peace process. Fencing is not a fructifying exercise for people on both sides of the border. We have been living together for ages without fencing, and we know exactly to what extent our land belongs. How are we supposed to farm our jhum land and take care of our cattle now with fencing?

From a tribal ecological perspective, the land is not a mere commodity. For tribes, the land is sacred in itself and their identity, culture, and traditions stem from it. To illustrate, Bodhi and Ziipao (2019) conceptualised land from the tribal perspective as 'being alive and the foundational basis of their identity and worldview'. The territory, on the other hand, constitutes hills, rivers, natural and mineral resources, air, water and people who first inhabited it. Each of these processes is conceived fundamentally as sublime living entities: all alive, dynamic and changing. Tribals have an intrinsic symbiotic connection between their identity, land and territoriality. Thus, distortion of tribal land and territory amounts to a denial of their agency and epistemology, as narrated by the Pangsha village chairman. Echoing the perspective of Tangkhul Naga tribes, Shimray (2012, 54) aptly demonstrates that 'the land is more than a habitat or political boundary. The land and local environment, particularly the forests, are the basis of the Nagas' social, cultural and economic system. The land-use system, the ownership and transfer of land, and the cultivation method relate to community and clan land, forests and settlements.

The regime of resource extraction, construction of connectivity infrastructure, and damming of rivers for hydropower generation, among others aggressively pursued by the state, invariably involve distortion of land and territory. In my earlier work, I argued that connectivity infrastructure built on the land, which is intrinsically related to tribal identity. Mega-infrastructures invariably fragment land, territory, village community and identity. The fragmentation of the holistic construction of identity in the processes of infrastructure builds on injustice and creates various kinds of conflict within the community vis-à-vis community and state. Infrastructure, as much as it connects and builds a network, also destroys community structure, identity and ecology. When land is turned into a commodity

and the state and dominant community appropriate such land for infrastructure development, the original inhabitants lose control over their land, leading to injustice. More so, when the benefits from such infrastructure development do not accrue for tribes, which is often the case, this perpetuates injustice or what may be called infrastructure of injustice. With such development, new governance systems are put into place, and tribes are forever dispossessed of their land and territory, leading to environmental destruction (Ziipao 2020).

It is interesting to note that the tribals have their unique ways of carving out roads for mobility where they take account of their ecosystem. For instance, the Poumai Naga tribes' construction of roads varies depending on the types of soil and topography. Their in-depth knowledge of their ecology and close relationship with nature helps them to construct roads that withstand all weather (Ziipao 2018). Tribal knowledge and age-old skills for the construction of roads and bridges have been kept alive and passed on intergenerationally in the form of lived experiences, shared narratives, material memories and oral histories. However, this invaluable knowledge is on the brink of extinction as the tribal reality is confronted and entangled in the inexorable waves of political-economic forces and various rules and regulations framed by the state. In many tribal villages, old roads are dismantled under the pretext of new and so-called modern roads by the state leading to ecological disasters. And yet, many of these projects are either incomplete or permanently suspended.

In the contemporaneous development practices and approach of the state, tribal knowledge systems, traditional institutions, and their ecology take a backseat. Tribals continue to be treated as mere recipients of the so-called modern knowledge and beneficiaries of welfare measures only rather than as part of the knowledge ecosystem. This approach to development is antithesis to tribal epistemology and amounts to epistemicide. Against this backdrop, Shimray (2012, 75) argues for 'upholding the customary knowledge systems, technologies and innovation related to the agricultural system and forestry. Recognition of customary practices would sustain the tribal ecology and economy in the long run'. To iterate, Indigenous/tribal knowledge is firmly embedded in land and territory hence there is a strong imperative to prioritise it on development practice for development with justice or in other words towards sustainable ecology.

Subaltern Ecologies and Tribal Sovereignty

In this section, tribal ecology is used to reconsider the concept of tribal sovereignty in the present. Place-specific claims are now used in the context of climate change to put forward alternative visions of sovereignty focused on sustainability against extraction. Sovereignty is typically thought of as a political concept shorn of ecological considerations and predicated on the construction of political community rooted in the exclusion of non-human nature. Humanity's instrumentalization of nature, and its philosophical separation from autonomous human subjects, is what makes political theory as it is currently constituted unable to adequately respond to the climate crisis. What is needed is a new conception of sovereignty, or at the very least of the underpinning principles of the *political*, which brings nature into a relationship of equality with society. Such a move will enable future political thinkers to deconstruct the myth of autonomous social and human subjects separated from the density of ecological relations.

This critique of political theory has recently gained in prominence alongside a revival of academic interest in the sovereign claim-making strategies of Indigenous movements against economies of extraction. Here, invocations of sovereignty are less invested in debates about the appropriate *philosophical* grounding of an ecologically-minded political theory, and are more concerned with foregrounding the *histories* of expropriation, genocide, and racism that have denied Indigenous communities status as equal political subjects. In settler colonial societies like the United States, this exclusion took place with the removal of Indigenous communities from ancestral homelands, breaking apart longstanding political communities and forms of communal authority. The idea that Indigenous communities – referred to in the U.S. context as "nations" – were constituted as juridically-identifiable sovereign groups prior to settler contact is widespread, often eclipsing older scholarly debates that these expressions of sovereignty were not historically prior, but were dynamically produced, on both sides, through long term histories of interaction with European empires. Either way, what is clear is that contemporary Indigenous societies are increasingly viewed as embodying the correct cultural understandings of ecological sustainability for constituting *future* forms of political community. Indigenous culture, land use and husbandry practices, ecological knowledge, and spiritualized orientations to the humanity-in-nature are reframed as political justifications for Indigenous over settler sovereignty.

In India, there is a less clear-cut way of mapping the relationship between groups identified as Scheduled Tribes or Adivasi and the current conjuncture within political ecology, largely because the very category of Indigeneity in the South Asian context remains so very fraught. For most Adivasi groups in contemporary South Asia, the model of Indigenous sovereignty put forward by activists and scholars from settler colonial societies is only partly applicable to the current moment. There are few historical correlates between the historical systems of treaties, layered sovereignty, and conquest that characterized settler colonial expansion in the Americas and the Pacific world, and the forms of land dispossession, ethnic marginalization, cultural oppression, and criminalization associated with the rise of "Adivasi" as a modern political identity expressed within caste-stratified Indian society.

Nevertheless, the last several years have witnessed a resurgence of sovereign discourse by South Asian Adivasi activists and Indigenous rights scholars, especially in territories that have experienced the proliferation of extractive industries in minerals and fuels since the commodity super-cycle of the early 2000s. Of note is the growth of what has become known as the *pathalgadi* movement. Taking as their point of departure the historic Adivasi slogan of "*jangal, jal, aur jameen*" or forest, water, and land, the *pathalgadis* represent an organized response to state-led expropriations of land long claimed by Adivasi communities. The power to either assent to or refuse dispossession orders for mining investment, *pathalgadi* activists have insisted, lies in the historic compromises Adivasi communities made with the early post-colonial state, and are embodied in decentralized governing statutes like the Panchayat Extension to Scheduled Areas Act or PESA. What such a claim implies is that Adivasis with historical ties to the land represent a political community standing beyond the sovereignty of the state. Or, to put it in a stronger register, that Adivasi sovereignty was not extinguished by India's state sovereignty.

How should we understand *pathalgadi* and related global calls for Indigenous sovereignty – both as a political program for historical justice and as an expansive paradigm for modeling more ecologically-minded relationships to territorial-bound polities? Scholars already have tools at their disposal for understanding what is being invoked in the present through new proliferations of sovereignty. That is the long tradition in Indigenous history, Marxism, and Polanyian-inspired social theory of what are often called "moral economies," or collective claims to political or non-market entitlements over the necessities for

reproducing social life. Such claims may not be the patrimony of any specific cultural identity, although prescriptive identities may profoundly shape the ethical and persuasive force by which moral economy claims are posed. These identitarian claims are composed historically in relation to the expropriating drives of state and capital, and the violent enclosure of Adivasi land and mineral economies that has unfolded since the nineteenth century.

Section Two: Scales of Tribal Development

'Isolated' and Integrated Tribes

Tribal ecologies have a fundamental spatial dichotomy rooted in village life versus ongoing processes of urban migration and agrarian settlement extending back to at least the 19th century. For many tribes, there is an ongoing movement away from village-based tribal livelihoods and towards agrarian transformations in urban contexts. This intervention opens for the discussion of how, and how far tribal peoples, Advasis, can be expected to have a different and more organic approach to the world than other groups such as caste organised Hindus or Muslims living in India. The argument will shortly inform on how the concept of isolation came into being, its present status in the scholarly literature, and how many of the tribal people variously termed Adivasi or by the technical term Scheduled Tribes in India are deeply integrated in the urban economies at present. In conclusion it is stressed that the tribes of India only differ scarcely from other agriculturalists, but that their partly marginalised situation offer them good possibilities to line up with ecological thought.

The concept of tribes in India may have originated as an ad hoc category for the people not belonging to the mainstream seen as caste organized society or groups belonging to world recognized religions. It is usually not spelled out, but it is remarkable that one tribe, the Santals were summarily classified as a people "of no caste" (O'Malley 1910: 99) in 1827 hereby explaining them as different from to the surrounding peoples organised in castes.

Among the colonial anthropologists Risley strongly argued for the presence of a number of different biological 'races' in India, some martial, some more meek, some tribal. In his volumes on *Tribes and Castes of Bengal* published 1891 Risley had two volumes of anthropometric evidence for the existence of several physical races. The descriptive articles of each caste and tribe discussed whereas the ethnic

group in case was Hindu, Muslim or a tribe adding discussions on how far it was a semi-Hinduized tribe of a caste with tribal elements or just worshipping certain tribal gods. Among the many correspondents submitting information to Risley were several Christian missionaries, some of them working to convert the tribal peoples to Christianity. But Risley never considered this discrepancy in his classification of the groups as belonging to one religion. In 1901 the *Census of India* classified the religion of the tribal people as Animism. And from the 1921 Census, geographical isolation and primitive conditions became part of the conditions defining tribes (Carrin 2021:2).

Later anthropologists have considered the settlement as well as cultural and religious belonging and identities. From the 1930s to the 1950s Indian anthropology saw a continuous discussion between Verrier Elwin and G.S. Ghurye (Guha 1999). Elwin who was a British, Oxford educated Gandhian had established an ashram and conducted numerous fieldworks among different tribes. He published their folklore and traditions and participated eagerly in media debates on the tribal peoples whom he defended. Ghurye, also an Indian nationalist, attacked him for attempting to isolate the tribals in museum-like conditions without any possibility for development. As part of his argument Guha identified how tribal peoples had adapted Hindu terminology for social organisation and religion arguing for an assimilatory politic towards the tribal peoples.

At a later point of time S. Guha (1999) argued for the long-standing economic interaction between Scheduled Tribes and the surrounding society. Both Guha and Ghurye documented that the tribes of India have been integrated into the larger economy and cultural worlds of South Asia for a long time, even if tribal peoples utilised the new cultural and religious concepts in their argument for a more just society. This was, for instance, the case with the Brahma Dharmas, the Dhormos founded among the Bodos in Assam in 1906 on the inspiration of the Brahmo Dharmo in Bengal. Over the years the independent Brahma Dharma in Assam demanded that the Bodos as they are presently named should be freed from the derogatory name Mech (i.e. Mleccha designating foreign people outside the social structure and hereby low caste people at the extreme end of being low caste). They also established schools and a literary journal for the uplift of the Bodos.

It was already in 1855 that the leaders of the Santal Rebellion, the *Hul*, under the inspiration of other reform movements forwarding *satya* the' truth', had stated that the colonial power, the East India Company did not extend their rule in a just way

due to corrupt practices and the exorbitant land rents demanded. So, the inspiration for borrowing cultural and religious concepts depended on their utility for the political argument against exploitation and cannot count as any argument for assimilation.

In some cases, it is easy to specify ways of inspiration of the innovative tribal reformers, such as Birsa Munda (Singh 2002) or Kalicharan Brahma who established the Brahma Dharmas. Here we see a line of communication from urban to rural situations. In other cases, it is not so easy, but one must not forget that there has been a high degree of interaction between the rural areas and the towns and cities in India since colonial times. Numerous tribal people work as construction workers or in the houses of the middle classes all over India. The recent Covid-19-pandemic reminds us, however, about how families in the rural areas are integrated with the cities and mega-cities. When visiting Santal villages in Birbhum in West Bengal in July-August 2022, many Santals told stories about friends and family who travelled across India on bike, railway, lorry, or motorbike to reach home. Others expressed how some had already returned to work in urban or peri-urban Maharashtra or Gujarat.

By and large the tribes in the rural areas were and are not living in isolation, as they have been part of large-scale economic and infrastructural transformations across India. In agriculture tribes as the Santals and Mundas (in Bihar, Jharkhand, Odisha and West Bengal) and the Bodos (in Assam) are all living on the plains where the Santals and Mundas have been part of the commercialisation of agriculture since the late 18th century, and the Bodos since the last part of the 19th century when Assam was taken over by the colonial power. In the last part of the 20th century, the changes in the social situation, migration and agricultural development have led to other social protests, sometimes armed, and the different groups have discussed and reformulated their cultural identity in new ways. The further commercialisation of agriculture due to the Green Revolution has led to new forms of indebtedness through the introduction of plant growth regulators (PGR), fertilizers and lately genetically modified crops.

Tribal ecologies and NGO Interventions in Eastern India[1]

[1] The *Danish NGO iiINTERest has since 2008 collaborated with the Indian partner (Ahead Initiatives – an NGO, though established as a so-called 'Section 24 organisation in order to ensure more transparency towards the public) with the overall objective of alleviating poverty, improving livelihoods, income and education among the poorest section in Eastern India (the states of West Bengal, Odisha and Jharkhand) – see www.iiinterest.dk).*

Non-governmental organizations have also been part of the making of concepts of tribal ecology. Indeed, connections between contemporary Adivasi "Indigenous" movements and the wider global sphere of Indigenous self-determination organizations and activism, is often mediated through international civil society organizations invested in notions of environmental justice. These organizations have their own understandings of both "tribe" and "ecology," many of which reflect the developmentalist and humanitarian considerations of the civil society organizations themselves. Others, often led by Indigenous activists, have sought to forge non-hierarchical exchanges of knowledge and culture in the formation of a pan-Indigenous ecological episteme.

The intersections of the professional development sphere with tribal ecologies raises important questions about how development practitioners understand local expressions of ecological and agricultural knowledge. iiINTERest, a Danish NGO that has worked in eastern India since 2008, has been directly engaged in promoting developmentalist projects that use ecological and so-called "traditional" knowledge practices in pursuit of new livelihood strategies. By virtue of the demographic categories of developmental work in contemporary India, iiINTERest focuses on village economies as a site of social reproduction and knowledge formation. The creation of a village or rural perspective on traditional ecology is thus conditioned by the broad groupings of BPL or Below the Poverty Line, which designates certain villages and communities as developmental beneficiaries. The social logic of BPL is thus elevated here above distinctions between Scheduled Tribes, Scheduled Castes, and Other Backward Castes - distinctions that can often be minimized when "poverty" or "livelihood" is the primary analytic for understanding village organization.

In selected areas of the three East-Indian states of West Bengal, Odisha and Jharkhand, where iiINTERest and Ahead Initiatives operate, a large fraction of the poorest population belongs to Adivasi communities or Scheduled Tribes (as stipulated in the Indian Constitution). While there are numerous indigenous groups residing in this part of India, majority of the groups targeted through iiINTERest's-Ahead's collaborative efforts, include Mundus, Santals, and Tharus.

The following explores iiINTERest's main challenges working with rural development among Adivasi communities in Eastern India both generally and especially relating to tribal forms of ecological livelihoods. Secondly, iiINTERest presents an operational conception of 'tribal ecology' that draws up the contours

of a framework for working ecologically with development among tribal communities. This framework is informed by iiINTERest-Aheads current applied approaches in their project areas.

The Challenge of Ecological Livelihoods

Marginalization of Adivasi populations in India is a well-known and established phenomenon. The historic disregard of India's indigenous population has positioned Adivasis among the most disadvantaged groups of present-day India, substantially constraining Adivasi communities in their ability to combat environmental degradation and changing weather conditions due to global warming. This marginalisation can be explained by a range of social, economic, cultural, and political factors, which individually and collectively have contributed to damaging tribal forms of ecological livelihoods, particularly related to agricultural production and natural resource management.

Among the social and economic factors are the continuous dispossession of Adivasi lands including privatization or appropriation of commons by government-owned infrastructure initiatives, which has resulted in limited land holdings, restrictions on access to land, poor terms of conditions when cropping the land as well, as poor terms of labour cropping contracts. In the wake of a market-driven and global economy, Adivasi communities across India have been forced to give up traditional forms of cultivation for their own consumption, and instead undertake commercialized practices of conventional agriculture to survive. In many places, this has left Adivasis' in vulnerable positions, either undertaking unsustainable farming practices (such as monoculture cropping or overusing fertilizers to increase crop productivity) or moving towards precarious modes of agricultural proletarianization as daily wage labourers. As researchers have pointed out, the criticality of this development is that by giving up their traditional livelihood practices and becoming dependent on casual wage labour for subsistence, these communities risk losing both skills, traditional forms of knowledge as well as potential claims to indigenous lands (Muralidhar 2018).

Much of the social and economic deprivation goes hand in hand with the political neglect of Adivasi culture and communities vis-à-vis the dominant Hindi and - in the Eastern Indian context - Bengali culture. In public schools across rural Eastern India, the educational materials used to teach children are largely informed by Hindu-urban middle class lifestyles and discourses. Thus, localised traditional knowledge, belief systems and skills can wither away, leaving many young people

alienated from their cultural heritage (see Andersen 2005:59-76; Bhattacharya 2014:75-91; Sarangapani 2003:218-238, 256-270). This has caused a state of cultural disenfranchisement across many Adivasi communities, and alongside increasingly narrow scopes for local income opportunities signs of social disintegration are starting to show. Many younger people have migrated to the urban centres in search of industrial income opportunities in sweatshops and factories. Those who stay behind (usually women and home-bound individuals), find themselves located in environmentally risk-prone localities, and without the social, economic, or political resources to combat changing weather conditions.

Despite recent years political promises to strengthen 'indigenous claims', actual improvements in representation and indigenous rights remain invisible at large. Often, tribal forms of organization and mobilization are infringed by international large-scale development interventions trying to 'fit all' into one-sized schematic blue-print solutions, or by government schemes that either never find their way down to the local tier of the Indian bureaucratic system or which simply provides strategic deliveries without any effort to build the capacities of local communities.

Two things concerning the relationship between Adivasi livelihoods and environmental degradation, should be clear from the above. First, that traditional ecological Adivasi beliefs, practices, and relationships to and around the environment, have been altered substantially due to factors largely endogenous to the Adivasi communities themselves. Historically, processes of marginalisation have resulted in a kind of slow erasure of indigenous Indian lifestyles and livelihoods, perhaps best captured through Nixon's notion of 'slow violence', i.e., "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attrition violence that is typically not viewed as violence at all" (Nixon 2011, 2). In this regard, rather than driving Adivasi communities into marginalised states of adaptive vulnerability, climate change and its increasing environmental volatility, has merely exacerbated existing mechanisms of marginalization (Malm and Hornborg 2014, 65). Secondly, restoring and reviving tribal forms of ecology is essential if we are to counter the current trajectory of environmental mass-destruction that we are currently on. Tribal ecology is to be understood in opposition to industrial agricultural politics and regimes, which have been promoted by Indian governments for decades. For this reason, reviving Adivasi forms of tribal ecology, not only holds the potential for a more dignified and just future for India's Indigenous peoples but provides a pathway for a more sustainable world more broadly as well. In what follows, we

briefly outline potential avenues for integrating tribal ecologies in developmental work.

Avenues of change: tribal ecologies as a pathway for development

Our conception of 'tribal ecology' contains two core components: One that stresses the *environmental* aspects of tribal livelihoods, zooming in on the long-term, sustainable effects of human-nature relationships of production/ livelihood, and which seeks to revive and revise traditional knowledges and methods of producing and managing nature in environmentally sustainable ways. A second that focuses on the *social, economic, political and cultural* aspects of ecology (as described above) and stresses the need for just conditions for tribal communities to practice their lifestyles. In collaborative efforts with Ahead initiatives, iiINTERest strives to integrate both understandings of 'tribal ecology' in their work among the poorest populations in Eastern India, in a holistic manner, that directs attention to marginalization – human and environmental alike. Accordingly, our approach does not particularly target tribal/Adivasi livelihoods and perceptions, but takes a broader approach, which seeks to bring about positive change to any poor household.

Economic and social ecologies

Hence, a salient point of our departure concerns addressing food security, nutrition, and livelihoods for the poorest sections in West Bengal, Odisha and Jharkhand. We label such practices 'Decentralized Natural Resource Management (DNRM)' as a way to distinguish them from what typically is implemented from the Central level in India based on 'Modern' mono-cropping practices. Without some basic and fundamental conditions in place, namely having a daily, nutritious meal changing other conditions/deficiencies is highly difficult. Advancing proper cultivation practices in kitchen gardens and some leased plots brings back a more varied type of food with higher nutritious content. Interestingly, bringing back what may be labelled as 'traditional knowledge' on cropping practices (in contrast to what often is presented as 'Modern practices/seed types and more) ensures ways of reinvigorating what we may call 'sustainable cropping and livelihood practices'. The benefits of such practices include e.g., water conservation, higher nutritious content, improving soil quality (working towards re-establishing the topsoil layers), ensuring independence of external seed producers and abolishing the usage of artificial fertilizers and pesticides.

Furthermore, we are also focusing on generating local incomes that are independent of urban industrial settings. Restoring traditional handicrafts do not only provide an economic foundation for the villagers, but also have the potential to stem distress migration as younger persons can identify opportunities for income generation. One of the important ways to such change include emphasis on a string of vocational activities (in what is called 'After School' activities - as they are undertaken in the local Schools after normal classes have ended). The crafts include a range of traditions including silk production, bamboo products, banana fibres, jute, water hyacinth, wood cutting, sewing and knitting as well as production of house items. Finally, the attempts to restore and grow local skills and crafts build on 'sustainable' principles. Hence, when weavers and other craft persons are involved in silk production, the thread comes from a natural source (a cocoon called Tussar silk), put together with natural cotton and coloured based on natural dyes.

Political ecologies

Our approach furthermore aims to organize the poorest members of the local communities, often in smaller groups (Activities Groups), based on participation of women. The participants/local inhabitants are closely involved in the undertakings and local resources (knowledgeable persons) are integrated into the work. We then work from the household/Activity Group level to assure that the Adivasi groups are not excluded from decision making at the local political level. We work to set up links by organising the participants in Village Councils, which in turn engage the municipalities (Gram Panchayats). The Gram Panchayats constitute an additional and crucial level in addressing the political challenges as the lowest tier of the Panchayati Raj system (also including Panchayat Samiti (Block level) and Zilla Parishad (District level).

This is again combined with participatory approaches that address the political aspects of representation, whilst respecting tribal forms of local organization, such as tribal leadership structures. Such an approach is also aimed at increasing resilience among Adivasi communities in order not to be experiencing collusion between powerful elders and different power holders at various levels (Gergan and Curley 2021, 3). Through this, we aim at working bottom-up with communities, local actors, including CSO's, local authorities and the lowest tiers of the Panchayat Raj system in order to generate local engagement, capacities and networks, with the power to define its own development objectives based on local world views and

relationships to the environment. Our hope is to be able to generate long-term improvements and dialogue.

In addition to the emphasis on sustainable cultivation practices, educational activities supported by iiINTERest also focus on environmental sustainability (including limiting climate change). The primary school children cultivate vegetables and other ingredients for their Mid-Day meal, where the same principles as mentioned apply. The school children also learn about their local area, its history and cultural practices through what is called 'Activity Based Learning'. Local storytellers, artisans and artists are identified and brought in to teach the children, to ensure that the educational content is relevant to their local contexts.

Conclusion: Tribal Ecologies in the Ethnographic Present

In this article we have outlined some of the main research questions that might organize ongoing work on the usefulness of tribal ecologies as an ethnographic category. These have included questions of the internal functioning of caste within Scheduled Tribe communities, the role of frontier governance and infrastructural development, the utility or non-utility of "sovereignty" as a conceptual correlate for *politicizing* tribal ecology, the urban-rural dichotomy within tribal studies, and the role of developmental and civil society organizations in the contested "reconstruction" of tribal ecological knowledge. We have further divided our analyses of tribal ecology into the discursive functioning of the antinomies of ecology, on the one hand, and the various spatial scales of tribal life - including the village, urban and rural migration, and tribal mobility more generally - on the other.

These areas do not exhaust the potential of tribal ecology for explaining the contemporary transformations of Scheduled Tribe communities under conditions of infrastructural displacement, social fragmentation, climate-induced deterioration to livelihoods and resources, emergent forms of caste and class mobility, and ongoing cultural and racialized expressions of social exclusion. Nevertheless, they may provide a framework for examining the interlocking nature of these phenomena, which also places the issue of ecology at the center of social analysis. Further ethnographic specification will be needed to directly connect these themes of tribal ecology to the unprecedented social and ecological crises stemming from anthropogenic climate change. Such work will inevitably enlarge the conceptual meaning of the category of tribal ecology itself. The remaining essays in this special issue try to do this concept work through more concrete ethnographic analysis,

providing us with the usable referents of a tribal ecology worked through the empirical content of contemporary tribal life.

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