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VOICES FROM THE MARGINS

Exploring Possibilities of Connecting Formal Education to the Funds of Knowledge
Owned by Adivasi Communities in the Kesla Block of Madhya Pradesh

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ABSTRACT

The Adivasis or the Scheduled Tribes (STs) are a significant segment of the Indian population, not just because they form a sizeable proportion of it, but also as a group with rich and varied cultural heritage. It is striking that despite constitutional provisions for their welfare and development, and protection against violence to their languages and cultures, they are historically the most marginalised communities in the country (Xaxa, 2005) and lag way behind in terms of various socio-economic indicators, including health and education (Xaxa et al., 2014; Rustagi et al., 2011). Ironically, the Indian education system has been a significant factor in the marginalisation and invisibilisation of Adivasi interests (Veerbhadranaika et al., 2012). The position paper concerning tribal education acknowledges that "the curriculum fails to take account of tribal cultures as autonomous knowledge systems with their own epistemology, transmission, innovation and power" (NCERT, 2006, p. 28). Further, the knowledge and skills that the tribal communities have historically accumulated and have been using for survival for generations are not just ignored and undervalued, but denigrated (Sundar, 2010). Deficit discourses about them seem common among teachers and textbooks, leading to discrimination and abysmally low expectations from tribal students (Sarangapani, 2003). Moreover, since their native language is different from the medium of instruction in schools, they face severe problems in expressing themselves and learning, in general (Devy, 2017). Consequently, mainstream schooling leads to the alienation of children from their language and culture (Gupta & Padel, 2019). Thus, a wide gap exists between school culture and Adivasi students' home culture(s).

Sarangapani (2003) underscores the need for going beyond the metaphorical sense of this gap by studying what constitutes the differences in these cultures. She argues that to connect traditional knowledge with school culture, we should first understand its form, content, and practice. Our study aimed to bridge this gap by documenting aspects of students' everyday knowledge and lifeworlds and exploring the possibilities of connecting the same with school education. Focusing on a theme in ecology, we intended to explore students' understanding of nature and its conservation. These ideas are of interest to us because Adivasi communities are known to have knowledge systems rooted in their lifeworlds, beliefs, and traditions that embody ecological harmony, and have a relationship with nature that is starkly different from the one that modern science espouses (Shiva, 1988). This is all the more important now that the pandemic has shattered narcissistic notions of modernity, that humans are supreme and can predict or control nature. Listening to and building upon narratives from diverse social backgrounds could help us learn ways of relating to nature other than domination and exploitation (Batra, 2021).

The study is situated in the context of four villages in the Kesla block of Hoshangabad district in Central India. Kesla has a sizeable population (46.18 per cent) of Adivasi communities (mostly, Gond and Korku). As per Census 2011, the average literacy level in the block is 70.88 per cent, but only 58.93 per cent among the Adivasi communities. Most people in the region depend on small-scale cultivation, labour work, and forest produce for subsistence. Kesla has a long history of people's organisation, struggle, and collective action around issues such as rehabilitation of those who were displaced by Tawa River dam, Satpura Tiger Reserve, and the Taku proof range of the nearby ordnance factory. The area has been a base of work by various organisations which have fostered an environment of critical and political awareness in the region.

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We have adopted "critical qualitative inquiry" as the research paradigm for this study (Guba & Lincoln, 1994). In this paradigm, researchers aim "to create conditions for empowerment and social justice" (Kincheloe et al., 2018, p. 421) by laying bare the structures of power and control that lead to the marginalisation of non-dominant groups and putting forth their voices, concerns, and experiences that are otherwise subdued. For data collection, we have used a strategic combination of qualitative research methods: ethnographic observations, semi-structured interviews, focus group discussions, and researchers' field notes. Further, to study how the official curriculum deals with these topics, we analysed middle school science textbooks followed in the state of Madhya Pradesh. In the context of the villages in Kesla surrounded by Satpura forests, wildlife sanctuaries, and rivers, the theme of forests, wildlife, and conservation came up frequently during our interactions with the community. We felt that this theme provides possibilities to raise questions that are meaningful to students from forest-dwelling communities. So, we focused on analysing two chapters, namely, "Forests: Our Lifeline" (Grade 7) and "Conservation of Plants and Animals" (Grade 8).

Our analysis shows that the textbooks adopt a conservationist approach towards the natural environment. Biosphere reserves and sanctuaries are presented in a positive light, but how these conservation projects by the state affect local people is not discussed. Instead, the textbooks explicitly put the blame on local people for harming the forests. The forest department is portrayed as leading the conservation efforts and people's efforts towards this cause are not acknowledged. Also, there is only a cursory mention of the forest rights of Adivasi communities, while regular conflicts between the forest department and local people are not touched upon. It is evident from the examples discussed in the two chapters and the sanskritised language used to present the content that the text seems to be aimed at children belonging to the "higher": caste and class. Our field associates strongly felt that these chapters seem to be written by non-Adivasis, for non-Adivasis. The lived experiences of Adivasi students, their knowledge, practices, questions, and concerns do not get any mention in these chapters. Further, the textbooks' approach to forests and wildlife conservation is utilitarian and anthropocentric. Forests are seen as a resource and all the arguments for conservation are made with human welfare as the prime concern.

The focus group discussions and informal interactions in the community gave us a peek into the history of our study villages and the communities living there as well as their daily routines, values, and practices related to nature. This gave us insights into their mostly self-sufficient lifestyle, resourcefulness, and hard work that, over generations, turned barren terrains into arable land, their knowledge about forests and rivers, and lived experiences of displacement. The community members we interacted with seemed to be immersed in their environment with strong connections to the elements in it, connections that seemed beyond those needed for mere survival. We got to know aspects of their spiritual, cultural, and philosophical relationship with nature. For instance, every Gond family has a plant or animal (or even a daughter) as a totem they worship and respect. They willingly share the commons not just with fellow human beings but with other animals too, which is starkly different from the practice of hoarding inherent in consumerist cultures. They are a tightly knit community, and for the lack of systemic support, they make ends meet with the help of each other, depicting an ethic of care and solidarity. The parity in gender roles and distribution of work is another interesting thing we noticed, but seems to be getting disrupted due to the state's policies around the conservation of forests. We heard concerns regarding dwindling forest produce, climate change, and systemic issues leading to these crises—something that

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the textbooks conveniently ignore. While talking about how conservation efforts have affected their lives, some narrated stories of multiple displacements of their village and the rupture of their lives, including the discontinuation of education for several generations. Some respondents also questioned the state's idea of nature (as exotic and separate from human aspects) and conservation inherent in the state's forest conservation effort which is top-down and exclusionary, taking the stakes away from the community. They seemed to see through the commercialisation occurring in the name of conservation.

To elicit students' understanding of forests and conservation, a four-day workshop was organised in one of the study villages in which about 35–40 students ranging from grade 5 to grade 8 participated. The interactions with students allowed us to learn about their worldviews, perceptions, and relationships with the forest, the richness of knowledge they had about the plants and animals, and their intricate knowledge of the interdependence of different species. They seem to have an ecocentric approach towards the environment and an ethic of respect and care for different forms of life (Sauvé, 1996). While talking about stakeholders of the forests, they attributed equal importance to every species (like caterpillars and even leeches) and included non-living elements (like they were concerned about "*chikhal*" or mud and the lifeforms in it, in the case of no rain due to deforestation). They saw the commons as essential for everyone involved and argued that these must be shared amongst all the stakeholders.

Thus, while the textbooks as well as the state's conservation projects assume a binary between human beings and nature, for children and other community members in our study, the natural and the social coexist—the forest, rivers, and hills are inseparable parts of their village, and they are an integral part of their environment (as depicted in children's drawings of their village and the forest). Their cultural and spiritual relationship with forests is reflected in their deep attachment to the place which makes it a mutualistic connection. They practice restraint in using forest resources and feel a sense of responsibility towards forests. Clearly, they did not see forests as only utilitarian despite their critical dependence on them. Such insights from this study offer possible ways of widening the narrow view the textbook adopts towards nature as a resource to be managed and protected from the people but at the same time utilised to the fullest extent for commercial purposes.

Since the textbooks provide no space for the students of Adivasi communities to share their experiences, concerns, questions, or knowledge on issues so central to their lives, they exert nothing but what Bourdieu and Passeron (1977) call "symbolic violence" on those students. Even teachers who recognise that Adivasi students have a vast landscape of experiences struggle to connect those with the school curriculum. What is therefore important is to create a "hybrid" space where Adivasi students' knowledge and culture is valued, a space where they can freely share their experiences and critically engage with issues that matter to them.

Informed by our analysis of the textbooks and exploration of students' funds of knowledge, we have conceptualised a learning module for teachers and Adivasi students of Central India. Incorporating the idea of a "critical pedagogy of place" (Gruenewald, 2003), this module is centred around locally relevant issues and aimed at developing a critical understanding of forests and wildlife conservation. We hope that the module would turn out to be a useful resource for teachers and educators working in similar cultural contexts.

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INTRODUCTION

The Rift Between School-World[1] and Students' Lifeworlds'

The COVID-19 pandemic has shattered narcissistic notions of modernity that see humans as supreme and able to predict or control nature. More than ever, there is a need to bring in alternate ways of relating to nature instead of domination and exploitation, and critically reflecting on current models of "progress" and "development". Listening to and building upon narratives from diverse social backgrounds can help us with these re-imaginings (Batra, 2021). A corollary for the field of education is that just as it is vital for educators committed to equity and social justice to engage with various marginalised groups and enable their empowerment, it is equally important to learn from the experiences of these communities. Firstly, bringing students' lifeworlds to the classrooms could help them make connections with the school curriculum. Secondly, the set ways of thinking within the school subjects (and mainstream mindsets) would gain insights from the way of life and values of these communities. This would also challenge the negative stereotyping of these students and their communities as "poor" not just in economic terms but also in terms of attitudes and experiences.

Emphasising the significance of contextualising education, the National Curriculum Framework (NCERT, 2005) asserts that it is necessary "to make the boundary between the school and its natural and social environment porous… not only because the local environment and the child's own experiences are the best entry points, into the study of disciplines of knowledge, but more so because the aim of knowledge is to connect with the world" (p. 30). Although it recognises the challenges involved in integrating traditional knowledge and official curriculum, the National Curriculum Framework (NCF) insists that it is essential to do so, for "unless learners can locate their individual standpoints in relation to the concepts represented in textbooks and relate this knowledge to their own experiences of society, knowledge is reduced to the level of mere information" (p. 30). Ethnographic accounts of classrooms (Batra, 2017; Dalal, 2015) caution us, however, that teachers continue to have difficulty in understanding this principle advocated in the NCF and therefore distort this connection. As a result, the dominant school ethos is one where children from marginalised socio-economic and cultural backgrounds continue to be stigmatised, excluded, and treated as non-epistemic entities.

The Broader Context of Adivasi Education

The Adivasis or the Scheduled Tribes (STs) are a significant segment of the Indian population, not just because they form a sizeable proportion of it, but also as a group with rich and varied cultural heritage. It is ironic that despite constitutional provisions for their welfare and development, and protection against violence to their languages and cultures, they are historically the most marginalised communities in the country (Xaxa, 2005) and lag way behind in terms of various socio-economic indicators, including health and education (Xaxa et al., 2014; Rustagi et al., 2011). Moreover, since development projects demand easy access to water, minerals, and forest wood, tribals' access to their primary subsistence sources, such as local forests, rivers, and mountains, has also suffered drastically. Comparative trends in the data from the 2001 and 2011 censuses show not only a persistent gap between the development indicators of STs and the general population, but a widening of this gap. As educators we must ask ourselves what

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[1] We are using the term "school-world" as a counterpart to students' lifeworlds outside of school.

purpose education is serving in times of globalisation and the fast-paced neoliberal economy, and how it is making the world a more inhabitable and peaceful place for the present and future generations, especially in the context of the most marginalised.

Education is essentially a political act. What is included and what is not, the perspective from which things are presented, and who benefits and who is left behind are all political matters. Several Indian visionaries such as Jotirao Phule, B R Ambedkar, and M K Gandhi have pointed out this political character of education. Freire (1996) emphasises the transformative role of education in a society and presents a model before us which urges us to work against social inequities, question the status quo, creates conditions for social transformation, and makes the world an equal and just space. Ironically, the Indian education system has been a significant factor in the marginalisation and invisibilisation of Adivasi interests (Veerbhadranaika et al., 2012). Apple (2019) points out that schools are prominent sites where dominant ideologies are promoted and reproduced through the curriculum. In the context of Indian education, the policy documents recognise that "the curriculum fails to take account of tribal cultures as autonomous knowledge systems with their own epistemology, transmission, innovation and power" (NCERT, 2006, p. 28).

Further, the knowledge and skills that the tribal communities have historically accumulated and have been using for survival for generations are not just ignored and undervalued, but denigrated (Sundar, 2010). Deficit discourses about them seem common among teachers and textbooks, leading to discrimination and abysmally low expectations from tribal students (Sarangapani, 2003). Moreover, since their native language is different from the medium of instruction in schools, they face severe problems in expressing themselves and learning, in general (Devy, 2017). If they speak in their language at school, they are "ridiculed, humiliated and reprimanded" (Saxena & Mahendroo, 1993, p. 2446). Consequently, mainstream schooling leads to the alienation of children from their language and culture (Gupta & Padel, 2019). It is striking that many ST children who eagerly enrol, drop out even before finishing elementary school (MHRD: GOI, 2018).

As a first step towards bridging the wide gap between school culture and Adivasi students' home culture, Sarangapani (2003) underscores the need for going beyond the metaphorical sense of this gap by studying what constitutes the differences in these cultures. She argues that in order to connect traditional knowledge with school culture, we should first understand its form, content, and practice. This study aimed to bridge this gap by documenting aspects of students' everyday knowledge and lifeworlds (i.e., their lived experiences, concerns, aspirations, and worldviews) and exploring the possibilities of connecting them with school education. Saraswathi (1972) portrays the richness of traditional knowledge, which includes both well-systematised knowledge and experiential knowledge. We drew upon this broadened notion of traditional knowledge to understand the practices that are culturally, socially, and ecologically related to our study.

The study, thus, had a two-fold agenda. One of the objectives was to explore the rich knowledge, experiences, values, and practices associated with nature among select Adivasi communities i.e., to understand students' lifeworlds better. In addition, we wished to examine how school education responds to Adivasi interests and in particular, how their knowledge and practices related to nature so as to develop a critical understanding of the school-world.

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Funds of Knowledge as a Theoretical Framework

We have adopted the funds of knowledge (FoK) perspective as the theoretical framework to understand the question of students' everyday knowledge, concerns, values, and practices. The FoK perspective recognises the significance of various cognitive and cultural resources that students from diverse communities bring to the classroom as having great potential for teaching-learning (Moll et al., 1992). While prevalent deficit discourses explain the underachievement of students from marginalised backgrounds in terms of deficiencies lying with students, their families, and their cultures, the FoK perspective turns the deficit-theorising upside down. Barton and Tan (2009) argue that acknowledging the diverse forms of knowledge, discourses, and identities rooted in students' lifeworlds as valuable resources can serve many purposes in teaching science. First, it makes the transition between students' lifeworlds and school science easier by creating a "hybrid, navigational space" and helps students to engage more deeply with school science. Second, while bringing different knowledges together, it pushes the boundaries of official school science to become more inclusive of students' everyday knowledge. Third, it legitimises the knowledge that diverse students have, and thereby challenges the exclusive nature of school science involving its own way of doing, speaking, and being which is usually at odds with the ways of being of marginalised students. It disregards the power hierarchy between school knowledge and traditional knowledge by positioning minority students as rightful experts of certain knowledges applicable to school science. Therefore the FoK perspective is closely linked to the idea of epistemic as well as social justice (Hogg, 2011).

The term FoK refers to "historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning" (Moll et al., 1992, p. 133). These FoK could serve as a resource for developing a meaningful and culturally relevant pedagogy as proposed by Ladson-Billings (1995), "not only addresses student achievement but also helps students to accept and affirm their cultural identity while developing critical perspectives…" (p. 469).

Zipin (2009) expresses the need to engage with the full range of students' lived realities which would imply that we understand their *dark* funds of knowledge, that is the knowledge accumulated and developed while living in difficult situations. This would include prior bad experiences such as conflict, harassment, or discrimination. If questioning of only positives in students' lifeworlds can serve as learning assets, he points out that "complex knowledges and expertise emerge in family and community resistances, resiliencies and other creative copings with difficult material and cultural conditions" (p. 322). Recognising and invoking such darker experiences in the classroom instead of avoiding it can trigger discomfort for students and teachers. However, this also has the potential to help students open up about issues that deeply matter to them and vitalise the curriculum by bringing into focus authentic "big questions" or difficult structural issues. Thus, a discussion building on students' dark FoK can be an empowering and transformative learning experience, and at the same time be an asset to transform what is being taught.

However, the school curriculum often discredits students' FoK and views their communities and households as places from which students need rescuing, rather than as places holding valuable knowledge and experiences that can be used for better learning. Thus, it is imperative that we have a space which affords a dialogue between academic and everyday discourses. However, to adopt the FoK approach in classrooms, teachers need to be supported with methodological innovations and strategies

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to obtain an empirical understanding of students' contexts, and to connect with the community (NCERT, 2010), particularly when teachers work in unfamiliar territories (Llopart & Esteban-Guitart, 2018).

In the subsequent section, we describe the research settings, lay out the research questions that we have explored in the study, and delineate the methodological paradigm within which the study is located. This is followed by a detailed description of various methodological details and the choices that we have made to keep the scope of the study manageable.

STUDY DESIGN

The Context of Kesla Block

This study deals with the specific context of the Kesla block of Hoshangabad district in Central India. Kesla block has a sizeable population (46.18 per cent) of tribal communities (mostly, Gond and Korku). As per Census 2011, the average literacy level in the block is 70.88 per cent, but only 58.93 per cent among the STs. Most people in the region depend on small-scale cultivation, labour work, and forest produce for subsistence.

This region has a long history of people's organisation, struggle, and collective action around issues such as rehabilitation of those who were displaced by the Tawa dam (44 villages), Satpura Tiger Reserve (50 villages), and Taaku proof range of the nearby ordnance factory (26 villages) (Mayaram, 2009). The area has been a base of work by various organisations such as SAHMET (Sir Albert Howard Memorial Trust), Pradan, Eklavya, and Kisan Adivasi Sangathan on the issues of livelihood, education, women empowerment, and sustainable development.

The Adivasi communities in the region

The Korkus inhabit the southern districts of Madhya Pradesh and north-eastern districts of the adjoining state of Maharashtra. They are a branch of the Munda tribes and speak the Korku language. Korku means a group of people and they are indeed a very tightly knit community. Bound by belief in a common ancestor and larger kinship, they share resources and labour (they contribute to each other's work). They have traditional mechanisms to settle disputes in which the elderly from the community mediate and try to solve the issue amicably. In the pre-colonial era, the Korkus were involved in *dahiya* (shifting cultivation) which was prohibited as it was considered primitive and thought to harm the forest (Deogaonkar & Deogaonkar, 1990). It is recognised now that it is a sustainable cultivation practice that allows the land to regenerate in the fallow period (Ramakrishnan, 2001). Although influenced by Hinduism, Korkus also venerate natural elements like the sun, moon, and rivers. They also worship the dead and treat their ancestors as gods. In memory of their dead, they make a small, carved pillar called the Munda. Placed at the outskirts of the village, the Mundas representing the ancestors are believed to look over the village.

The Gonds are one of the largest Adivasi communities in India, and most of them live in the states of Madhya Pradesh and Chattisgarh. They call themselves "Koitur" meaning the ones who come from the forested mountains. The elders speak Gondi, which is a Dravidian language with a lot of resemblance to

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Telugu, showing that they moved to the central plains from Southern India. They have an interesting history that has been well-documented by scholars such as Bodhi (2016) and Prasad (2017). It is believed that the Gonds ruled Gondwana (a region in the past extending across parts of the present Madhya Pradesh, Odisha and Andhra Pradesh) from the 13th to 19th century. For a brief period, the Gond kingdoms were taken over by the Mughal rulers. Then in the 1740s, with the Maratha attack, the Gond leaders and their people had to retreat to the forest and hills. Under colonial rule, along with other tribes, they too began to lose access to the forest and their livelihoods related to it. Marginalised by colonial forest management policies, in the early 1900s, the Gonds rebelled against the British regime. It was a Gond leader, Kumram Bheem from the Hyderabad state of British India who coined the slogan "*Jal, Jungle, Jameen*" (translating to Water, Forests, Land) which has symbolised the Adivasi struggle against exploitation and exclusion from their commons (Bodhi, 2016).

Context of informal learning centres

The study commenced when the COVID-19 pandemic was gradually being brought under control in the country. However, access to schools was still restricted, and the scenario was unlikely to change any time soon. For most students in Kesla, as for many in other parts of the country, without access to phones or mobile networks, online learning was out of reach. Therefore, we decided to start a few informal learning centres in the region and interact with students in the context of those learning centres (*Mohalla* learning activity centres as they are called). For more than a year now, we, as part of our work at Eklavya Foundation, have been running 10 such centres in the Kesla block with the help of 14 volunteers from the community. These centres have been envisioned as spaces for activity-based collaborative learning and are facilitated by educated youth within the community for middle school children in their neighbourhoods. The centres have helped us build a rapport with the community, understand their lives, explore children's everyday knowledge better, and support their academic learning that was set back due to the lockdown. For this study, we have built on the genial relations that we developed with the students, teachers, and parents in the focal villages (Figure 1).

Figure 1. Location of focal villages of the study in Kesla block | Google Maps; edited by Aisha Kawalkar
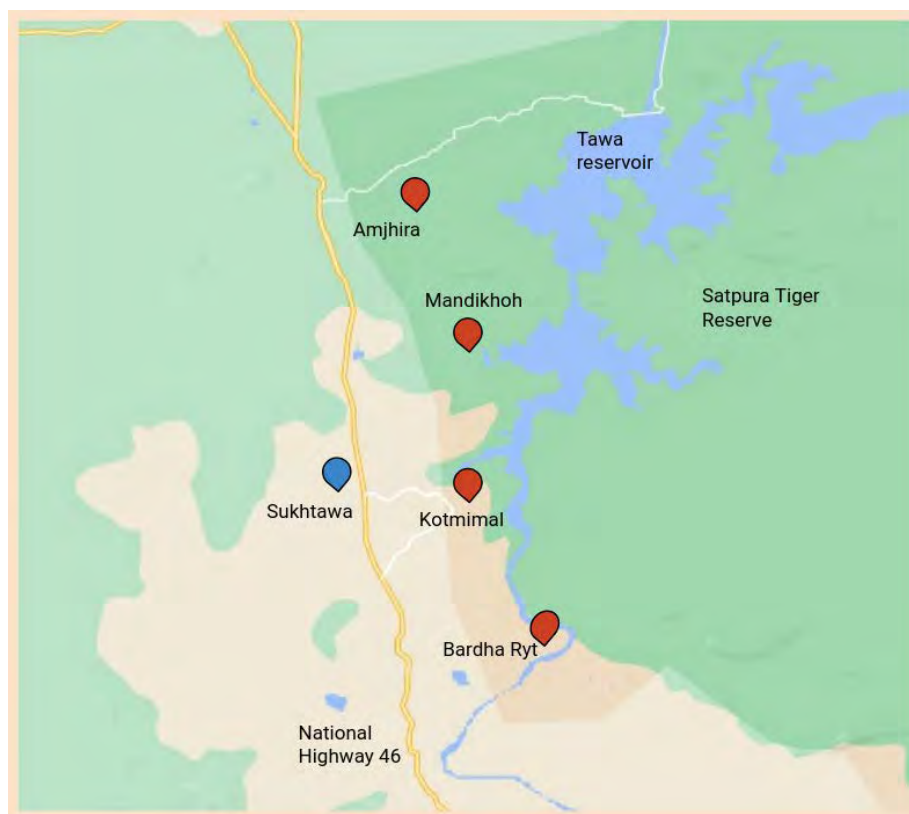
Focal villages

We selected four villages in the Kesla block that fall in the buffer zone of the Satpura Tiger Reserve. All these villages have more than 75 per cent Adivasi population. Two of the villages are entirely Korku or Gond while the other two have a mix of Korku, Gond, and other communities officially deemed Scheduled Caste/ Other Backward Caste. Table 1 provides socio-economic information about the focal villages collected from the public records available in Anganwadi centres, panchayat offices, and government schools in the villages (The last published source of government data is the Census of 2011, which is a decade old, so we collected the socio-economic data directly from focal villages).

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Table 1. Socio-economic profile of the focal villages

Village	Amjhira	Bardha	Kotmimal	Mandikhoh
Panchayat	Pipariya Kala	Dandiwada	Bhargada	Morpani
Communities	Korku	Korku and Other Backward Castes	Gond	Korku, Gond and Other Backward Castes
Families	115	292	83	191
Families below poverty line	115	135	83	20 (Below Poverty Line) + 10 (Antyodaya[2])
Total population	586	1040	527	1054
Male	286	547	267	550
Female	300	493	260	504
Male Voters	167	408	138	285
Female Voters	168	389	132	318
Adult literacy %	70	75	77	90
Average Agricultural Land (Acres/family)	8	Other Backward Castes- 2[3] and Scheduled Tribes- 8	5	4

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[2] The poorest among the families below the poverty line, who do not have a stable income due to situations such as unemployment or old age are issued an Antyodaya ration card for provisioning of highly subsidised food.

[3] Other Backward Caste communities in the region are engaged more in cattle rearing and small-scale business than farming.

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Research Questions

In this study, we attempt to bring forth the rich yet marginalised perspectives of the Korku and Gond communities in the Kesla block. With a broad focus on ecology, we aim to map the cognitive and cultural resources that lie with the young and adult members of these communities, particularly their understanding of nature and its conservation. The study also aims to analyse how the school curriculum negotiates students' lifeworlds as a prerequisite to developing curricula that are contextualised and meaningful to the community.

Ecology is a vast field involving studying flora and fauna, how they are related to each other, and how they interact with the environment. Learning from our initial interactions with the community, we decided to narrow the subject of the study to forests of the Satpura range, the interactions of Korku and Gond communities with those forests, and the idea of conservation in the context of the Satpura Tiger Reserve. In the literature we found some references to the work that explored the knowledge of ethnobotany and ethnomedicine (Upadhyay, 2013; Rai, 2016) in the context of Kesla block. Some field-based organisations have also attempted to link such knowledge with school curricula, but systematic documentation of the FoK of these communities with regard to forests is not available. A related question is how school education responds to students' knowledge, experiences, beliefs, and concerns. The study aims to contribute to fill this gap in the literature. In particular, we explore the following questions:

1. What funds of knowledge have the young and adult members of the tribal communities in the Kesla block gathered while living in close association with the forest?
    • What are their beliefs, knowledge and practices related to forests?
    • What is the nature of their relationship with the forests?
    • How do they make sense of the changing access to the forests?
    • How do they understand the conservation initiatives such as Satpura Tiger Reserve?

2. How does school education respond to Adivasi students' lifeworlds?
    • How are the school textbooks positioned with respect to the students' lived experiences and their everyday knowledge of the forests?
    • How do teachers view students' funds of knowledge? What challenges do they foresee in connecting the official curriculum with their students' contexts?

Research methodology

The study is based on "critical qualitative inquiry" (Guba & Lincoln, 1994). In this paradigm, researchers aim to "create conditions for empowerment and social justice" (Kincheloe et al., 2018, p. 421) by laying bare the structures of power and control that lead to the marginalisation of non-dominant groups and putting forth their voices, concerns and experiences that are otherwise subdued.

With regard to research methodology, we have drawn upon critical ethnography (Carspecken, 1996; Madison, 2005) to design methods of data collection. Critical ethnography is an overtly political research methodology that aims to blend theory and practice (Lather, 1986), and therefore it seemed to be an apt choice for this study. It is an outcome of the convergence of two main traditions of research—critical theory and ethnography. While conventional ethnographers view critical theorists as too theory-driven,

lacking in their methodological approach, and offering no practical guidance for research in education, critical theorists often find ethnographers as too neutral and atheoretical in their approach and lacking in their theoretical grounding. Critical ethnography addresses this problem of theoretical and methodological dissatisfaction from both these traditions (Anderson, 1989).

Barton (2001) points out that politicising ethnography is a distinctive feature of critical ethnography. To clarify her position, she argues, "… (critical ethnography as a methodology) is rooted in the belief that exposing, critiquing, and transforming inequalities associated with social structures and labelling devices (i.e., gender, race, and class) are consequential and fundamental dimensions of research and analysis" (p. 906). Thus, critical ethnographers bear an "ethical responsibility to address processes of unfairness or injustice within a particular lived domain… take us beneath surface appearances, disrupt the status quo, and unsettle both neutrality and taken-for-granted assumptions by bringing to light underlying and obscure operations of power and control… (and) use the resources, skills, and privileges… to penetrate the borders and break through the confines in defence of − the voices and experiences of subjects whose stories are otherwise restrained and out of reach" (Madison, 2005, p. 5).

Field associates as co-researchers
"Field associate" (FA) mentioned in this report refers to 7 of the 14 community volunteers who facilitate the informal learning centres in the four focal villages became part of the research team. Their participation in the study was based on their willingness to join the project after being briefed about it, their availability, and their perspectives with respect to education and their communities. The FAs were paid separately for their time and work. They themselves belonged to the Korku or Gond communities and had just graduated college or were students (all of them, except one, have a background in science) at local colleges at the time of the study. Although we had initially considered having only 3 field associates, a wider pool of associates seemed necessary since the FAs were likely to be unavailable at times owing to either study or other work. So we decided to work with all 7 of them. Their presence not only benefited the study by providing an insider perspective, but also in vetting the questionnaires and activities that were used with various participants, identifying key respondents in their villages, facilitating interactions, and analysing the data.

Getting consent from the respondents
We had prepared the protocols for getting written consent from the various kinds of participants in our study and had these reviewed by the ethics committee of the Indian Institute of Human Settlements (IIHS). However, when we started interacting with the community in the field, we realised that most people were sceptical about signing (or putting their thumbprint) on any paperwork. Invoking written consent was effectively going to break the bond that we had gradually built with them over time. We had to get verbal consent for recording their voices on an audio recorder, taking notes while they talked, or taking their photographs during our interactions. At times, the respondents themselves asked us to note down what they had to say even before we asked for their consent. We also got consent from the students to video record the workshop sessions so that we did not miss any details. Some students were curious about the instrument and wanted to see themselves recorded on the video camera. So, we took some time out to let them get comfortable with the camera recording before and after sessions.

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Data Collection

Textbook analysis

As standardised textbooks are both an essential component of the formal education system in India and a principal source of learning in school, it was essential to analyse them. The aim was to examine the existing relationship between the lived experiences of Adivasi learners and the part of the world represented, described, and discussed in school.

The process began with a broad scrutiny of chapters from grades 6–8 science and social science textbooks[4] followed in all government schools in the state. These textbooks have been reproduced by the state government after paying the due royalty to the NCERT. Based on the content and relevance to the theme of the study, 12 chapters were shortlisted and analysed by team members. The selected chapters from the social science textbook covered themes such as understanding and confronting marginalisation, natural resources (including land, soil, water, natural vegetation, and wildlife), along with two chapters from history, focussing on Adivasis, nomads, and settled communities. The chapters from science textbooks covered subjects like the conservation of plants and animals, forests, food, water, and agriculture. Since the interactions with community members and students focused on the themes of forest and conservation, we focused further analysis on two chapters from the science textbooks of grades 7 and 8.

Informal interactions in the field

In the context of informal learning centres, we have been interacting with children and other community members for about a year on an everyday basis. Some of these interactions in the community culminated in detailed discussions on their culture, the history of their villages, agricultural and forest-related practices, and displacement threats because of the increase in the height of the dam or because of the Satpura Tiger Reserve. Since people in the villages have busy routines—they leave early morning for their fields and come back only after sunset—it was difficult to have an extended conversation with them during the daytime. Therefore, in addition to the regular visits during class hours at the learning centres, some of the research team members decided to stay overnight in those villages and talk to community members at their convenience. These occasional residential visits helped us build a rapport and spend extended time in the village. They also provided us with a unique opportunity to learn more about their routines, beliefs, and practices.

Along with these informal conversations, walks around the village with the children and outings with them to the nearby forested hills gave us insights into their extensive knowledge about their surroundings. A visit to the forest during the *mahua* season, where we participated in the picking, gave us a chance to talk to people about this culturally and economically significant activity. We also attended some cultural events and attempted to understand the rituals involved and their possible connections with nature.

During and after all our field visits, we took detailed field notes that included a description of the village settings, records of informal conversations about the people's relationship with forests, their agricultural

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[4] About 4 years ago, the Madhya Pradesh government adopted the NCERT textbooks (based on National Curriculum Framework, 2005) for grades 6,7, and 8. Here onwards, we refer to these textbooks as grade 6, grade 7, and grade 8 science and social science textbooks.

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practices, food habits, festivals, rituals, and folktales related to nature. Wherever possible, we did a photo or video documentation of our interactions while being vigilant about the ethical issues involved.

Focus group discussions with community members

The informal interactions were more like unstructured interviews at first but with time we sharpened our questions and developed them for further communication. Informed by our initial interactions, we developed a tool for focus group discussions (FGDs). We made several community visits to invite participants to these discussions and establish a convenient time. We explained the intent of these discussions and sought verbal consent from our respondents for data collection and recording on an audio recorder. We conducted FGDs in three of our study villages. In the first one, conducted in Mandikhoh, there were 12 community members. We realised that this was a big number to coordinate with, and not everybody was able to talk in this setting. So, in the later FGDs, we kept the number of participants down to six or less.

These interactions were semi-structured and explored issues ranging from cultural practices and customs followed during festivals, traditional and present-day crops, their dependence on forests and the traditional knowledge of forest produce (for example recipes of various dishes they make from different parts of the *Mahua* tree), socio-political issues related to the agrarian crisis they are facing, and displacement of villages caused by the Satpura Tiger Reserve. For a quick look at the number of participants in each FGD, please refer to Table 2.

Table 2. Number of participants in FGDs

Village	No. of Participants in the FGD
Amjhira	4 (all male)
Bardha	6 (2 female, 4 male)
Kotmimal	-
Mandikhoh	12 (3 female, 9 male)

Interviews: Community members

In addition to the FGDs, we had semi-structured interviews with individuals around questions similar to the ones used in the FGDs. This format allowed us more flexibility and time for in-depth interactions. As these interviews were conducted in the homes of the respondents or in their courtyards, sometimes one more person would join in the conversation. Thus, for some of these interviews, there was a pair of respondents. Since women were mostly busy with household chores, there were very few female respondents available for interactions on a one-to-one basis.P

During the study we learned about Khamda, a village right next to Kotmimal that was being displaced due to the Satpura Tiger Reserve. We strongly felt that we had to meet the people there and understand their issues and perspectives about the crisis. We felt that this would relate to our research question on understanding peoples' views on the changing access to the commons. We made an overnight visit to this village, staying with a relative of our FA from Kotmimal and interacting with his family. In total, we interacted with 6 community members on a one-to-one basis and 12 community members in paired settings across five villages, including Khamda (see Table 3).

Interviews: People associated with various organisations

As discussed earlier, Kesla has a long history of Adivasi people coming together to fight for their rights. Various organisations have been working in the region to support people's struggles. We interviewed people associated with three such organisations (Kisan Adivasi Sangathan, Pradan and SAHMET) to understand the historical context and their perspective on matters. This data has primarily informed our understanding of the cultural and political history of the region.

Interviews: Teachers

Three science teachers in the government schools in three focal villages (Amjhira, Bardha, and Mandikhoh) were interviewed in a semi-structured manner to elicit their views on students' everyday discourses, possibilities of connecting the curriculum with student contexts, and challenges involved in making those connections.

Table 3 provides a quick summary of the number of participants involved in the study.

Table 3. Participants in the Study

		Number of Respondents
Community Interactions	Individual interviews	6
	Paired interviews	12
	Focus group discussions	22
Students in the Workshop		35-40
Teacher Interviews		3
Interviews of People from Other Organisations		3

Student workshop

A four-day workshop was organized in May 2022 in one of the study villages in which about 35–40 students ranging from grade 5 to grade 8 participated. The sessions were conducted after school hours in one of the learning centres in that village. Each session went on for about two hours. The workshop focused on exploring students' conceptions of forests, their relationship with forests, their values and practices associated with forests, and their understanding of interdependence, conservation, and development. The workshop was called Bal Mela (kind of a summer camp) in which activities and discussions were sandwiched between games and other extracurricular activities like origami and toy making. This was crucial to keep children engaged for the whole duration.

Before the workshop, we informed students in the two learning centres about it, and along with our FAs went to their homes to notify the parents and get verbal consent. A day before the actual workshop, we went round the village and took students along with us to the venue. We painted a banner for the event and decorated the venue with origami that we had made together. We also played a team-building game (the human knot game). All these activities were aimed at creating a buzz around the event and sparking students' interest. Table 4 provides a brief description of the sessions in the workshop.

Table 4. A quick overview of the student workshop at Mandikhoh

	Activities as Part of the Elicitation Sessions	Intent of the Activities
Day 1	Filling in a small brochure with details about students	Getting to know students better and getting details like their age/ grade
	Drawing a picture of their village	Setting the context, highlighting that there is a whole ecosystem of people, animals, jungle, river, farms etc., and that we would be discussing these topics over the next few days
	In one activity, every student had to pick a random card with a (Hindi) letter on it. They had to then name something you can find in the forest that starts with this letter. If they couldn't, others could help and if nobody could find anything with that letter, the next card would be picked up.	Exploring the different associations students have with the adjoining forest
Day 2	Drawing a picture of the jungle so that someone who has never seen a jungle could see what a jungle looks like	Further exploring students' knowledge of the forest
	Role play: Identifying who would be affected if there are no more forests, and in small groups choosing a stakeholder and thinking of all the ways that this stakeholder would be affected.	Exploring students' ideas on various relationships that people and other organisms have with the forests, their ideas on interdependence of species
Day 3	Discussion on who has the rights to the forests, who has a role in degradation and loss of forests, students' perceptions of the Forest Department (FD) and its role in the forest, any conflict with the FD, the need to conserve the forest and possible ways to do it	Continuing discussion on various stakeholders of the forest and who is responsible for loss and degradation of forests
	Reading and discussing the story "Khamda ki Meenu"	Eliciting experiences and views about conservation, displacement due to conservation projects, and development—their idea of what makes a good life

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Day 4	An activity on ecological webs - each child was assigned a label with an abiotic (e.g. soil, river) or a biotic element (a plant/ plant material like wood or animal including people). Students stood in a circle and a ball of thread was passed from one child (representing an element) to the other based on a relation between the two.	Further exploring students' idea of interdependence in an ecosystem by adding elements such wood, city dwellers, companies, forest guards, and the villagers, we attempted to extend this activity from food webs to varied human influence.

Data Analysis

We have employed the "funds of knowledge" framework to make sense of the interview and workshop data. The analysis focused on examining the knowledge, values, beliefs, and practices of young and adult members of the community with regard to forests and conservation. The textbook chapters were analysed from the standpoint of the forest-dependent Adivasi communities of Central India to understand how connected or disconnected the chapters are with respect to their lived experiences and practices.

Since all the structured interactions with respondents happened in Hindi, the audio-visual data (about 30 hours) was first transcribed in Hindi. The FGDs and the interviews with teachers, community members, and other respondents were about 1–2 hours each. The student workshop resulted in 7 hours of audio-visual data. Selected parts of the data were translated into English for broader discussion and writing purposes. The data was analysed using thematic coding (Thomas, 2006). Codes emerged through inductive and recursive analysis of the data. Providing thick descriptions in the reporting of data, peer debriefing at regular intervals, member checks to ensure data was not being under or over-interpreted, and triangulation across multiple data sources (Merriam, 2009) ensured legitimacy of the findings. Since some team members were outsiders, we tried to be conscious of our own positionality (Clarke, 2003), and maintain greater reflexivity (Charmaz, 2017) on our worldviews, language, practices, and how they might affect the way we view our participants, data, and analyses. The research team used a shared document to keep reflective memos.

Having people from the community on board was valuable to ensure an insider perspective through various phases of the study. We shared all the research instruments with our FAs in advance, and they helped us refine the tasks and questions for interviews and focus group discussions. In our meetings with them, they would often ask questions about the activities, ask for the purpose, frame interview questions differently, suggest additional questions, and share their interpretations.

In the next section, we report the key findings of the study which are organised around the research questions. In section 3, we describe the funds of knowledge owned by the young and adult members of the Korku and Gond communities in the Kesla block. This section is divided into four parts: a) the idea of a forest, b) people's relationship with forests, c) Understanding the changing access to commons, and d) ideas on conservation. Textbooks' and teachers' perspectives are reported in section 4.

THE COMMUNITIES' FUNDS OF KNOWLEDGE RELATED TO FORESTS

The Idea of a Forest

In the students' workshop, we asked children to draw a picture of the forest so that even a child who had never seen a forest would know what it looks like. Figure 2 shows a collage of a few students' drawings. Apart from drawing wild animals and birds, trees, hills, and water bodies brimming with aquatic life, about 40 per cent of students drew people involved in activities such as picking *mahua*, grazing their cattle, gathering firewood, fishing, or travelling in boats. An equal number drew an artefact showing human presence, either the Betul Baba shrine that they worship, a basket left among *mahua* flowers fallen under the tree or fencing by the forest department or the forest guard's post. While wild animals abound in the drawings along with their shelter or source of food, there were also domestic animals grazing there.

Figure 2. Collage of students' drawings of their forest | Drawings from students of Mandikhoh

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On the other hand, when they drew a picture of their village, over 60 per cent of students drew the nearby forest, hills, and rivers along with fishes and crocodiles. The presence of the Betul Baba shrine, physically located in the forest, was a more prominent part of the drawings of the village than those of the forest. Thus, the village and the forest seem to flow into each other. The children do not see them as separate entities but as forming their habitat together. One of our FAs pointed out that for her people there is no clear boundary between the village and the forest as "...fencing wires have come up now, we have been living here since so long." (Gulia, Excerpt from data analysis workshop).

This was also evident in another activity in which each student had to name something found in the forest, starting with a (Hindi) letter they picked at random. The students associated forests with both a wide variety of wild animals and birds and also domestic animals who depend on the forests for fodder. They included plants of various kinds—wild, flowering herbs and shrubs, trees with edible fruits, those that are medicinal, and those whose leaves are offered to Betul Baba. There were also abiotic elements like the cool breeze, livelihoods like that of the snake charmer, and also supernatural, cultural entities like spirits.

Students' responses in the two tasks discussed above indicate that they see the natural and the social world as a continuum. We see such a continuum for the community between the natural and the social related to the forest in other instances too. One example is that of the divine space interwoven with the natural space. On our visits we see their deities not confined to temples, but in nature—under a tree or among mounds of stones by the river represented by a stone or a flag (Figure 3). The second instance is that of the connection between life and the afterlife for the Gond community in the region. Priyanka and Neetu, our FAs who belong to the Gond community, described how the forest is a place for their ancestors to stay in their afterlife. When someone in their community dies, after the last rites, the family picks a stone from the river in which the departed soul will reside. This stone is placed in a part of the forest, along with others, where they are believed to stay forever and watch over the village. There seems to be no idea of a separate hell or heaven (that many other religions of the world have and use to guide moral behaviour). It is the jungle which the community visualises themselves to be at peace with forever.

Figure 3. A place of worship in the forest near Mandikhoh | Photo Credit: Manjusha VGVS

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Thirdly, their traditional homes blend seamlessly into the landscape, made mostly from natural materials like clay, wood, and earthen tiles, with open spaces in front of the house where there is a shed for the cattle and a place for people to sit. There is the kitchen with an earthen hearth, *kothis* (granaries) for storing grains and finally, *baadis* (backyard kitchen gardens where they grow vegetables and crops like maize) (Figure 4).

Figure 4. A contemporary granary at the home of a field associate in Kotmimal | Photo Credit: Priyanka Bhallavi

The children also saw the forest as an ecosystem, including various interlinked elements in their drawings from different kinds of plants to herbivores and carnivores, along with hills and water bodies. There were different ecological niches depicted in the forest from grasses to tree tops to ponds and rivers, with shelter and food for various creatures.

During a discussion in the workshop on what would happen to animals without forests, students displayed an elaborate knowledge of the interconnections in nature. Here is an excerpt from a small group discussion in which different students raised these concerns:

> The weather would get affected by either very less or torrential rains and there will be ill effects of both. With less rain, the vegetation would dry out and without the roots holding the water in the soil, the rivers and lakes would also become dry. The temperatures would soar. With no food and water, animals will die. Deer and jungle buffaloes as well as domestic animals like cows would not get fodder. Birds would not get fruits or places to make nests, so where would their eggs and fledgelings be? *Jal murgi* (a water bird) will also lose its place to stay. The red-faced monkey, black jungle fowl, and foxes will not get food or water. Snake charmers will be in trouble if there are no snakes as snakes would not get frogs to eat. Butterflies will not get flowers. If there are no fresh leaves and fruits, caterpillars will have difficulty, ants will also not have food…
> (Excerpt from student workshop, Day 2)

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Evident in this discussion is children's knowledge of the local biodiversity, and also the complexity of ecological connections among various living beings and their environment. Their statements also reflect an understanding of how different abiotic components like the soil and water are linked with biotic components like the roots of trees and how the absence of one could affect the others and cause a change in the climate.

Along with a good understanding of the web of life, children had inklings of what would happen if these connections were disrupted due to deforestation. For example, it would lead to human-wildlife conflicts.

> If there is no forest, where would all the animals stay? If they come to the village, then people will not be able to get out of their houses. Those animals will eat the hen and the cattle.
> If the bees don't get to make hives in the forest, they will come to the village and people may break those hives. (Excerpt from student workshop, Day 2)

The elders in the community also saw the rich biodiversity as an essential feature of the forests. Ghudulalji, during our interview with him in Mandikhoh, described a good forest as the one with abundant water resources and a diversity of vegetation: "…*acche jharne hain, jhad ped badh gaya hai jaise jamun ke, aam ke… acchar hai, tendu hai, baans hai*" (there are a good number of streams, lots of vegetation has grown). He contrasted this with an area where there is just teak or bamboo. Such an area is usually an afforested plot where the State Forest Department plants teak in majority. Madan, a member of the community speaking during the FGD in Bardha, rejected the idea of calling such a plantation a forest. He was talking in the context of forests next to their village which he said were not there anymore. The state cut down the native varieties of trees and now there are only teak trees there as part of the afforestation scheme. It is interesting that he did not consider this monoculture a forest. A diversity of vegetation supporting a variety of life-forms is an essential feature that the community sees in a forest.

Relationship with Forests

With only small patches of land mainly used for subsistence farming, the communities in our study villages have a critical dependence on the forest to support their everyday lives and livelihoods. On the question of "How will children in the village get affected if there are no forests?", students provided a long list of things that the villagers get from the nearby forest. The list included materials that they need for household use (like firewood for everyday cooking, thorny twigs for *baagud* or fencing around the house, fodder for their animals, edible tubers, mushrooms, and leaves like *rasalli*, *koliyar*, *chirota, ushti* and young bamboo shoots to make *kelta,* a curry) and forest produce for selling after saving some for themselves (*mahua* flowers that are used to make local liquor and several food preparations), *gulli (mahua* seeds) used to extract cooking oil, *achaar or chironji* (little almond-flavoured seeds) used for dressing sweet dishes at special occasions, *chheenda* (date palm leaves) to make brooms, *tendu* (Indian ebony) leaves used to make *beedis (*a kind of cigarette), bamboo to make several household items like baskets, *supa* (a handmade instrument for winnowing grains), and *tatta* (a bamboo frame or trellis on which water is allowed to trickle, leading to cooling of air).

They also collect various medicinal plants like *kadwa chirak, guru vel, reetha, beela, baheda*, *dhatri,* and *dudhai* bark to treat various illnesses like jaundice, fever, and kidney and gallstones. Some medicinal

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herbs, they said, they can recognise and know what they are used for but don't know their names. One student in particular described a leaf that is used to heal cuts. This seemed like an example of how such experiential, indigenous knowledge, rooted in the child's habitus, is "local" i.e., culturally and ecologically integrated (Sarangapani, 2003). Students also mentioned various fruits such as *kosum* fruit (Ceylon Oak), *neebu* (lemons), *amla* (gooseberries), *imli* (tamarind), *sitaphal* (custard apple), *aam* (mangoes), *badaam* (almonds), *saagwaan* (teak) fruit, *khajur* (dates), *jamun* (malabar plum), *rai jamun* (another kind of *jamun*), and several varieties of wild berries they get from the forest. If there were no forests, they sadly acknowledged, their access to these fruits would also go away. They also said that the wood they bring from the forest is mainly used to make boats, beds, tables, and doors in their hamlets.

The forest thus provides for the community in so many varied ways—for food, fodder, shelter, livelihoods, and medicine. No wonder children saw the forest as a safety net that protects them from poverty and starvation. One of the students, Kajal, said, "*Fasal theek se nahi hui, paise nahi hai, khana nahi hai toh hum jungle jaakar kha sakte hain, pani pi sakte hain. Jungle bhi nahi rahe toh hum kya karenge*" (If the crop is bad, there's no money or food, we can still go to the forest for food. What would we do if there are no forests?). In one of the families that we stayed with for a night in Bardha, our host said that at one point they were so destitute that she had only one nine-yard saree torn into two. She had to wash one half and wear the other. At a time when they had no land for farming to make ends meet, they foraged for *chirota bhaji* (a leafy vegetable) and *mahua*. Their house was made of *cheenda* (leaves of date palm). All of this support came from the forest. It is disconcerting that this security net that the forest provides is weakening with time, affecting diet and health. In Bardha, during the informal interactions, many respondents noted that sources of food such as leafy vegetables like *chirota, bhundki, chop chop*, tubers like *chani,* and different kinds of mushrooms are now a rare find in the forest.

However, their relationship with the forest seemed more than just utilitarian. In addition to describing this long list of dependencies on the forest, Nirbhay (grade 7) expressed concern about how everything would be deserted and desolate without forests ("*Jungle nahi honge to sab soona soona ho jaayega*"). He said that he had been picking *mahua* from the same tree in the forest every year, for many years, and he was very attached to the tree. Similarly, Rishabh (grade 5) described how he enjoys looking at the red-faced monkey (the Rhesus macaque) and its antics and said that he would not like it if he did not get to see these monkeys regularly. During several informal interactions, adults as well children of the community described how they felt a profound sense of care towards the forest due to which they take resources judiciously (just about enough for their needs), collect only dry twigs and branches, and take care that there are no forest fires. The box titled "Simple acts of care" shows another instance of children's close connection with their forests and the sense of responsibility that they feel towards it.

The jungle is a place where they work and also a place where they wander for pleasure, along with their friends. Hence, they have a deep attachment to the place. It seemed like the forest was a big part of their well-being in all senses of the word. We got a glimpse of this association that children had with the forest during our field trips with them. They seemed to be immersed in their environment with strong connections with the elements in it. While walking through the woods, they would pick up a leaf like that of the jamun tree or a petal of some wildflower and make it into a whistle, or blow bubbles from the sap of *Ratanjot* twigs. When we got to the top of a forested hill near Mandikhoh during one such trip, the children

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said that they liked to come here for the tranquil view—they could see everything from there. Altap (grade 7) added how everything looked small from there—their village and all of its problems too ("*Yahan baith kar dekhte hain toh accha lagta hai, gaon kitna chota lagta hai, aur humari dikkatein bhi.*")

Simple acts of care: Notes from our informal interactions with children

… The children from the village and us have become good friends now. They offered to take us along to the forest near their village. So, we planned a day-long outing with them. While planning, when it came to food, the children suggested that we could cook up a snack. With all chalked out, responsibilities assigned, carrying some essentials we headed to the jungle.

As we made our way into the jungle, the children shared so much about it. They introduced us to many trees and other plants and talked about which ones are medicinal, in which season they flower, which ones they like, which are the favourites of squirrels and monkeys and so on. They also picked some berries along the way. But soon our tummies were growling for more food. We found a spot, cooked food, and finished it too. It was amazing how everyone had pitched in.

Finally, as we wrapped up and it was time to leave, Ajay (a seven-year-old) and his friends insisted on waiting until the fire was put out. He said, "We'll leave only after we put water on the ashes. Else, this can trigger a fire in the Jungle." Some of the children went to a pond nearby, fetched some water and put it on the ashes, ensuring that it cooled down. Our young friends knew how to care for the forest.

During our interactions with the community, we learned aspects of their spiritual, cultural, and philosophical relationship with nature. For instance, Amarlalji from the Khamda village explained that every Gond family gets their name from a plant or an animal (or even a daughter) that they consider a totem. The Uikey family name comes from the *urrum* or monitor lizard, Iwane from the crane, Tekam from the *sagaun* or teak tree and so on. They worship this living being and would not hurt it. They believe that it also respects them and will not harm them. In Amjhira village, a certain patch of forest is considered sacred. It has groves of very old wild *aam* (mango) trees surrounded by other trees like *sagaun* and *gular*. A stream of water (*jhira*) also flows through these groves. So, they call this place Amjhira, and the village also gets its name from these sacred groves. The people also conduct rituals and offer prayers for the well-being of the village or at the start of the sowing season here. No one takes away anything from here for personal use. The community also accesses it only on certain occasions thanks to which the sacred groves of Adivasis remain protected and are known to foster rich biodiversity (Dar et al., 2019). Such cultural connections indicate that the Adivasis have a mutualistic connection with forests and not a unidirectional one.

Many of their festivals indicate that they practice restraint in using forest resources. One example is *Chaitis*, a festival celebrated in late monsoon, sometime in August–September. Both the Gond and Korkus in the region celebrate it. During an interview, Bhuriyabai, an elderly woman in Amjhira, explained that they do not eat any leafy vegetables before this festival even though they begin growing after the rains. During the conversation, she listed many vegetables that they forage from the forest. It appears that this practice allows these wild plants adequate time to grow before they are harvested.

Another such festival is *Kadh*. While talking to a *parihar* (traditional healer) in Bardha village, we learned that Kadh is an auspicious occasion for the Korkus. It is celebrated on the day after the festival of Pola when cattle are adorned, worshipped, and treated with special food. On the day of Kadh, some members of the community visit the forest and collect medicinal herbs. While only a select few recognise the necessary herbs, those who wish to accompany them also tag along. They pray to the herbs before taking

the tubers or leaves, and harvest medicinal herbs only once a year. It is said that they will work only when harvested on this day. Such restrained harvesting, although not explicitly reported by the community as being a practice for sustainability, definitely prevents excessive extraction. These medicinal resources collected during Kadh are shared with the village community. It is not meant only for the use of those that have the expertise and put in the effort to find and gather them.

In this and many other cases, we find that the forest is seen as commons over which everyone has a collective stake, including the animals. This is evident in the manner they share the bounties of the *mahua* in the forest. Picking *mahua* flowers is a significant economic activity in the region, and members of most households go to the forest during the *mahua* season. While farming is mostly for subsistence, selling *mahua* provides cash income for expenses like paying off loans, wedding ceremonies, and other necessities. For those who don't have land or for those who can only farm a single crop, the *mahua* is a saviour. Some of the *mahua* is also used for making alcohol for household use and also for various dishes like koya, chipa, laddu, and kheer. Given the immense value of *mahua* in their economy, we were curious to know how people share these common resources.

On our visit to the forest near Mandikhoh during the *mahua* season, we got to participate in the picking. While we did this we spoke to them about the economy of *mahua*, recipes for various dishes that are made of *mahua*, and the norms related to sharing resources. We learned that in the forest area adjacent to the village, people mark trees by hanging a piece of cloth around them. Members of the community are usually aware of which tree is marked by whom and they leave them be even when there is no one to supervise the fallen *mahua*. Everyone gets some share of the *mahua* depending on how many members of the family are involved and how much time and effort they can put in. If there are disputes, the elders in the village mediate and resolve them. Deeper in the forests, the trees are not marked. If anyone is willing to go a little deeper, they can collect *mahua* from any tree they like.

There was an incident in Bardha that was an exception to the fair access norm. One of the respondents, Sheela Chouhan, complained that the few non-Adivasi (Yadav) families in their village had claimed almost all of the *mahua* trees in their forest. She said this was unlike the Adivasi norms of common property. She reported having a brawl she had with one of them, "*Saare jungle aapne rok kar rakh liye, hum karein kya, beene toh beene kya? Yeh jungle hai, yeh apne patte ki jagah nahi hai, aise kaise rok ke rakha, hum kaafi aas laga kar aaye jungle mein.*" [You have claimed all of the forest, what will we do? How will we pick *mahua*? This is the forest, it is not private property, how can you claim it just for yourself? We also come to the forest with a lot of hope.] Another woman who was with her, Ghudobai, remarked that they have *mahua* trees on their farms and so they pick them at their own pace. She described how the fallen *mahua* attracted many visitors—boars, bears, sambar deer, monkeys, and birds in addition to the cattle. Monkeys also eat the *toor phalli* and *chana* (lentil and gram crops) from the farm. She narrated this in a calm, matter-of-fact fashion without accusing the animals of being pests. She recognised that *mahua* is food for other animals too, indicative of the peace with which she lives with other creatures. Sharing of common resources not just with fellow humans but also with other animals is in direct contrast to the hoarding culture inherent in a consumerist society.

Sareen (2016) alludes to *mahua* as one of those natural resources that provide a lens to understand cultural norms in indigenous communities relating to ownership and access as well as larger political processes and structures that govern this access and the benefits from it. Drawing attention to the political economy of forest produce in Central India, he notes that the local elites (such as traders) have profited at the cost of Adivasis, and state policies have not just allowed but enabled these extractive and exploitative practices. He argues for devolution of power and resources to local governance institutions to manage natural resources according to traditional values honouring collective rights.

Interactions with the community revealed more examples of peaceful coexistence of humans with different species including wild animals that most non-forest people find 'dangerous' or 'harmful' to the human way of life. An illustrative excerpt from our field notes about a boat ride on the Tawa River with some members of Mandikhoh:

> *This was our first time staying in Mandikhoh. When we were talking with his family, Madanlalji offered to take us for a boat ride to the other side of the river, to see the caves and cave paintings. Of course, we were eager to go. The next morning, we left on two-wheelers, riding through the fields and hilly terrain. It required quite some skill to ride through the rocky terrain, particularly in some patches.*

> *We rode up till some point and then walked through the wheat fields by the river. It was a serene sight—green patches of growing wheat and the gold of the ripe wheat against the tranquil blues of the shimmering Tawa in the background. There were machans in the fields for jaagal (night watch). In one field we saw a beautiful contraption which was basically a windchime made of a used glass bottles with a few sticks and pebbles, and also some rags attached. The pleasant sound and the movement of the windchime were reportedly to keep the wild boars out of the field. Thinking of such a harmless solution for wild animals that tend to destroy their fields, we felt, was ingenious.*

> *During the ride, Madanlalji said that they ventured deeper into the Tawa at times into an area which was nearer to the tiger reserve. We asked if he had, at any point of time, seen a tiger there. He, quite nonchalantly, said that he sees tigers on the river bank many times, mainly in summers, as they come to drink water. Concerned, we asked him "Aapko darr nahi lagta?" (Aren't you scared?) Amused at the question, he said "Nahi, woh apne jagah rehte hain aur hum apni jagah. Kuch karenge nahi jab tak, woh kuch nuksaan nahi pahunchayenge." (No, they are in their space, and we are in ours. They won't harm us unless we harm them.) We were pretty surprised by this answer. For those of us who are non-Adivasis, it was difficult to imagine being in a place where there is a tiger or a snake or something that has even the smallest potential of harm. But their way of seeing life and their place in nature is perhaps distinctively different—they understand the need for coexistence with other organisms. They did not see their needs (even that of safety) as a priority over others' lives. Also, they seemed to trust rather than fear other species, even the tiger.*

Ghudulalji, an elder from Mandikhoh, told us in his interview that they worship the tiger as *Baghdeo* and it is considered the protector of forests. He also narrated stories of how the deity in the form of a tiger would frequently accompany an elderly woman during her daily foraging in the forest and did her no

harm. Perhaps it was just such a worldview of peaceful co-existence stemming from many generations of living in harmony with nature that induced caution but not panic when a tigress and her cubs were sighted in Mandikhoh, a few months ago.

Such harmony, however, is slowly being disrupted due to the anthropocentric views and approaches behind development and conservation projects. For example, a major reason that people in Khamda agreed to relocate was the attacks by tigers and leopards on their cattle. Amarlalji, during the interview in Khamda, said that this started when the neighbouring villages were vacated for the sanctuary. Those villagers had had to leave behind their cattle as they could not take them all, and predators started frequenting the area for easy prey. After Khamda was completely vacated, we heard that there were similar attacks on cattle by leopards now in the neighbouring Kotmimal. Such ferocious attacks were new to people in Kotmimal. They stopped work on their farms out of fear of the leopard and returned only when the river between Kotmimal and the sanctuary was full after the next monsoon. Another case of conflict with wildlife was reported by residents of Bardha during the FGD there. They said that there had been sporadic attacks by elephants in recent times. Several newspaper reports indicate an increase in human-elephant conflicts in Madhya Pradesh and attribute this to elephant herds coming into the state from the adjoining states of Chattisgarh, Jharkhand, and Odisha where their habitat is being disrupted by mining and deforestation (Mishra, 2020; Naveen, 2022).

Overall, the students and members of the community with whom we interacted have a multifaceted relationship with forests. Although they have diverse dependencies on forests, they do not view them as merely a resource. Their spiritual connections with forests, in fact, lead to a reciprocal relationship. Their cultural norms and economic orientations involving forests such as having a diverse subsistence base, recognition of collective stakes to the commons, and sustainable harvesting are intended for long-term cohabitation and have much to offer to mainstream endeavours of environmental protection and sustainable livelihoods.

Change in Access to the Forest

Villages in the Kesla block have seen large-scale displacement due to development and conservation projects of the state. This history of displacement along with experiences of the ensuing hardship, the tenacity, resourcefulness, and hard work with which they turned barren terrain into arable land, their solidarity in supporting each other in lieu of support by the state, and the collective struggle against injustice meted out to them is notable and pertinent to how we conceive of forests and their conservation.

Rajpal Uikey from Kotmimal shared how their land was expropriated by the state in the 1970s for the Tawa dam reservoir in exchange for a mere ₹250 per acre. Now their families have an acre or so for farming other than the draw-down farming that they do. Draw-down farming (or *doob ki kheti* as it is called in the region) refers to cultivating land exposed when water from the reservoir recedes in the summer. This kind of agriculture is possible only for 3–4 months in a year, and the villagers get temporary titles for the land for which they have to pay revenue whether they are able to plant in time or not. There is a lot of uncertainty about when the water will recede since the state does not inform people when the gates of the dam will be opened or closed. Villagers often face losses due to this, like Rajpalji did this year.

He said that he had planned to grow watermelon and moong but was unable to sow as the land remained under water. However, the Patwari (Revenue Officer) came on time and demanded the lease money, threatening to give away the land to another bidder. Another minor source of income was the produce from the forest across the river which has been declared as the Satpura Tiger reserve. As with the other focal villages, this declining access to the forest and other related resources, is forcing people to migrate to cities for labour work and other minor jobs. Rajpalji also reported that he had worked for some time as a watchman but couldn't take the ill-treatment he received for being a Gond and returned to his village to live with dignity. He said he would be happier in the village with his kin, with whatever little he can earn, "*thoda bahut kheti hai, usse guzara kar lenge*" (with the small farms we have, we will survive).

Mandikhoh is one of the villages among the 44 that were displaced due to the Tawa dam. Not only their village but also farms and large tracts of the nearby forests were submerged under the reservoir. While some people migrated to new Mandikhoh at another location as part of the rehabilitation, some moved to a higher level on the surrounding hills. There was no proper resettlement, and the compensations were meagre (Mayaram, 2009). The forest was the main source of livelihood for the Gond and Korku tribes who lived in the village. Suddenly, with the building of the dam, their access to it was restricted. Also, the land that they had for farming was on a slope. It had a thinner layer of soil and so was less fertile. During the FGD in Mandikhoh, members of the community reported that they slowly made bunds (embankments) on the slopes to stop water and soil from running off and tilled the small patches of land some of them got. Most others began draw-down agriculture.

To supplement their meagre earnings, they (along with the other neighbouring villages) fought for fishing rights in the waters of the reservoir that now covered the land they once lived on. The fishing activity in Tawa Reservoir was initially controlled by Madhya Pradesh Fisheries Development Corporation and then given on lease to private contractors who fished indiscriminately for maximum profit. People saw this as injustice and demanded their rights. They formed small co-operatives which united as the legendary federation called the Tawa Matsya Sangh (TMS). It was an uphill task to convince the government and confront the private contractors who threatened and manhandled the local fishermen. However, under the banner of Kisan Adivasi Sangathan, people took the path of struggle and staged a long series of protests. Eventually, in 1996, the government agreed to give them fishing rights. The TMS worked as a co-operative for 10 years, and by ruling out middlemen and distributing profits equitably, increased the earnings of the fisherfolk by three times.

This part of the story of the TMS, illustrating how collectives of marginalised people have fought and won their rights, also appears in the NCERT grade 9 social science textbook. However, the textbook is missing a crucial aspect of the narrative—how this collective worked because of the traditional knowledge and values that Adivasi fisherfolk brought to this effort. It is what made their methods distinct from the profit-maximising operations of the private contractors. Balaram Chouhan from Bardha village who has worked in the Sangathan's fish depot in Kesla for many years discussed during an interaction in his village how the co-operative did not just profit from fishing in the reservoir, but also took care of the fish. The federation had depots in different villages where they grew fish seed and meticulously monitored the catch—the amount and the size of the fish. Only when the fingerlings were nourished and grew bigger, were they put in the reservoir, increasing their survival rate. Another practice which ensured that small fry was spared

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to sustain the fish population was to only catch fish that had grown to adult size. If Rohu fish of less than 1 kg and Katla fish of less than 2 kg were caught in the net, they were put back in the water. Madanlal Baraskar, a fisherman in Mandikhoh also shared that traditionally, fishing is stopped for about two-and-a-half months during the rainy season when it is time for the fish to breed.

Thus, the TMS simultaneously did the work of conserving the fish in the reservoir while taking care of people's livelihoods. Unfortunately, after 10 years, their lease was not renewed as the area was included under the Satpura Tiger Reserve. Now, fishing there is equivalent to poaching and therefore not allowed except on a small scale in the peripheral areas. Notably, fishermen in the region report that the fish population has also drastically reduced since. It is ironic that the state's move to protect the fish by bringing it under a "protected area" has led to the eventual decline in the number of fish. On the other hand, the tourism department has made Tawa a popular tourist destination with a lavish resort and cruise boats. Faagramji from the Kisan Adivasi Sangathan asks how such commercialisation does not pose a problem for conservation while the livelihood of people dependent on the forests (or even their mere survival on the forest produce including the fish) is seen as a threat.

There were some other significant yet often overlooked strands of this story of people's displacement in Mandikhoh. Ghudulalji reported that not only was his education left unfinished due to displacement (there were no schools for a long time in the new settlement), but that his children's education also suffered when they had to move again due to the establishment of a buffer zone for the reserve. It is unfortunate that when we talk to the education officials and teachers in the region, many of them say that the children coming to their schools are Adivasis and that the children and their families are not interested in education. During our interactions with the people, however, we heard many narratives of how people had to forego education because of the state's projects of conservation or development. Two women in Bardha (Bistori Bai and Rampyari) said during the FGD that as children they used to live in another village near Saheli in Kesla. They used to go to school across the river with much difficulty. However, when the Central Proof Range (touted by the defence department as Asia's largest proof range) was established in the neighbouring Taku village, bomb shells started to fall in their village. Their village like many other villages surrounding the proof range was evicted and they had to stop going to school. Some of our respondents, like Ramprasad Baraskar and Rajpal Uikey, told us how they had to travel long distances to access faraway schools. In Khamda we learnt that the school and health services of the state were closed down long before the village was vacated for the tiger reserve and there were no such facilities in the new location. Lorry Benjamin of SAHMET commented in her interview that the state has been withdrawing essential services (like education and health services) as a tactic to force evictions.

Sundar (2010) also points out that the state often cites the impending possibility of displacement for non-provisioning of schools, and on the other hand, uses the argument of lack of schools to justify the displacement of Adivasi villages. Drawing attention to the statist understanding of development (in which the state has substantial centralised control over social and economic affairs), she cites the famous Supreme Court judgement of 2000 dismissing the anti-dam movement Narmada Bachao Andolan which stated that tribals should be "encouraged to seek greener pastures elsewhere, if they can have access to it, either through their own efforts due to information exchange or due to outside compulsions." (p. 89, Narmada Bachao Andolan vs. Union of India, Majority Judgement, 2000: 26). She says the state has been

justifying the exercise of compulsion against Adivasis this way, arguably in their own best interests. Such an imposed model of development and its underlying grand national themes of progress and modernity have been criticised for reinforcing colonial processes of domination and exploitation (D'Souza, 2012).

Another strand was that the boundaries of the reserved areas seem to be unclear and expanding. When asked about an incident involving conflict between some villagers in Mandikhoh and forest officials which reportedly led to a woman's death, a village elder explained that the woman had been draw-down farming on a patch of land that forest officials claimed was now under the National Park so not allowed. The elder claimed that this patch of land hadn't been under the control of the forest department, and the boundary of the protected area has been expanding without any notice(*"doob ka zameen tha…lekin line ke uss taraf sarkari ho jaata hai…line ke idhar malguzari mein rehta hai, revenue mein rehta hai, woh van vibhaag ke under aa gaya, tha toh doob mein, haq toh doob walon ka hai lekin unke under aa gaya toh woh kehne lage nai jotne denge, humare ismein sambar, suar charenge, tum log idhar aayenge toh jhaad kaatenge matlab… Unki boundary toh pehle udhar hi thi, Tawa ke uss par… Tawa ke jahan paar lage diye abhi inne aur idhar kahin khamba gadha diya idhar aur bole ab… dheere dheere sarka rahein hain.. Udhar ke kshetra se poora bhaga diya unhone Panchmarhi area se logon ko"* (Excerpt from an interview in Mandikhoh)

When we chose to work in this region, we were aware there was history of displacement. However, during the course of our interactions in the community, we learnt that there was the possibility of displacement again in the near future. In Bardha, officials from the forest department had begun meetings with the community informing them that their access to the forest and the river would be restricted soon, and that their village may also be relocated. They had started negotiations for compensation. After Khamda was emptied out, wild animals like leopards started coming into Kotmimal. Here and in some nearby villages, personnel from the forest department had reportedly started measuring the land without revealing the purpose of this exercise. One of our FAs reported that an official told her mother (who was working in their farm at that time) that their village would also be moved, and this exercise was related to the relocation. In Amjhira and Mandikhoh too, there were talks of displacement. Many people will face this excruciatingly painful experience twice or even thrice in their lifetimes, and their access to the forests will be completely lost.

The Idea of Conservation

Since all the villages where we interacted with people in the context of this study are located in the buffer zone of Satpura Tiger Reserve, community members often made references to it in their conversations about forests and how their access to forests has changed over time because of it. This is a state initiative aimed at protecting the environment and wildlife in the region. However, like many other conservation initiatives of the state, it too has come at the cost of disrupting the lives of the local people—mostly belonging to Adivasi communities—who have been living in the surrounding forests for ages. For the Satpura Tiger Reserve, 50 villages were evacuated from the core area of the reserve (Mayaram, 2009). Their struggles for adequate compensation, arable land, and restarting their lives in new places are still going on. When we chose to work in this region, we were aware that these communities have had a long history of displacement and struggle. However, during the course of our interactions in the community, we learnt that people are worried about the possibility of being displaced again in the near future. Therefore, it seemed highly pertinent to discuss the conservation projects of the state and the ensuing issues of displacement of forest-dwelling communities with students.

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When we brought these intertwined issues with a fictional story called "Khamda ki Meenu" to the student workshop, it was striking to see how normal the discourse on displacement was for the students of Mandikhoh. The story makes a reference to the Khamda village which was about to be displaced. The story was used to elicit students' thoughts and feelings about conservation projects and the displacement due to them in their region. The discussion was centred around questions such as: Why are villages displaced? Who makes such a decision? Why do you think the government allows this? What is the effect of this displacement on the villagers? What kinds of problems do they face? Could there be any benefits to such initiatives?

The storyline was about a young girl, Meenu, who is around the same age as the children in the workshop and has similar routines and relationships with the forest as them. Her village is about to be relocated somewhere away from the forest to make place for a "sanctuary" (a term that came up frequently during our community interactions). When we asked the children if they were familiar with what this term means, they said it refers to the Satpura Tiger Reserve. For them, a sanctuary is a place that is reserved for tigers and other animals, where humans are not allowed, except for the forest officers who protect it. After hearing about the turmoil that Meenu was going through, the students were asked to imagine themselves in Meenu's shoes and think of which of the options for compensation they would choose in lieu of their ancestral land if they were in the protagonist's place. The options were -

1. a *basti* (ghetto) near the city where though there might not be much land for farming, there would be a school, a hospital, a market, shops, water and electricity connections, and a mobile network.
2. money in exchange for land.
3. a large piece of land near a highway. It would not be very fertile but could be put to use for other purposes though not for growing much.
4. a land near some other forest with a river close by and also a school and a health centre.

After brainstorming on these options in small groups, the participants were asked to share their views in a common discussion. It turned out that not a single student opted for the money in exchange for land. They argued that the money, irrespective of the amount, would get over fast, which is the same argument that we heard from the adult members of the community as well. Notably, this form of compensation which does not ensure social and economic protection is predominant in the region, especially in recent times.

The land near a highway was also not a preferred choice. A student pointed out that people passing on the highway litter and dirty the place which could result in ill health. Farming would also not be very productive in such a place away from the river. Of what use would such land be, they wondered. It is ironic that many of the villages removed from the core area of the tiger reserve (like Ratibandar and Bhaadbhud) have been resettled along the national highway passing through Kesla.

It was striking that only two young students chose the first option i.e., the option of living in a *basti* near the city with various facilities. These were the students of grade 5 who thought that if they lived in the city, they would be able to study as the electricity supply would be more regular there. This comment needs to be seen in the light of the fact that some days previously there had been no electricity in their village for one whole month, and various household and agricultural activities had suffered in that period. For the others,

migrating to cities was not a preferred option as they were wary of living costs (they would have to pay for everything, even water, which would be difficult to afford), congested spaces without much greenery or places to play like the river, hills, and trees, the frequency of road accidents in cities, the pollution and the stench of large open drains and garbage piles, encounters with police, and discrimination by city dwellers. While some students joked that the ones opting for a place in the city were being greedy, some indeed equated life in the city with greed: *sheher mein lalach hota hai* (there is greed in the city). One of them remarked that essential facilities can be brought to their village in the forest, but there won't be a forest in the city ("*Jungle mein sheher aa sakta hai lekin sheher mein jungle nahi*").

If there was no choice left but to shift, most students unanimously said that they would prefer a location similar to the existing one. Their everyday lives are so intertwined with the forest that they were confident they could reconstruct their lives if a forest and a river were close by.

Students' responses are reflective of their notion of a good life, a way of living and being. Their ideas of quality of life are not just closely tied to the place they live in, but also seem to aspire to a sustainable lifestyle that distinguishes needs from desires and sees through the problems of the unhindered, growth-based model of development.

Many students strongly supported a thought that Meenu had in the story—of putting up a fight against having to leave her village behind. There was talk in their own village about the possibility displacement in the near future. The students asserted that if this happened, they would not move, and that they have communicated their stand on this to their families. This was starkly different from the position that many of the elders in the community had on displacement. The issue had come up during the FGDs in Bardha as well as Amjhira. The elders seemed resigned to this fate—if the government asked them to move, they would have to. There seemed to be no choice although they admitted that it would cause problems for them. Some of our FAs (representing a perspective of youth from the community) also said that they would prefer moving. They saw this as an opportunity to access alternative futures with better avenues for education and employment in the city, although a few other FAs argued that they would prefer a place closer to the forests, hills, and rivers. Students were the most vociferous group among those speaking against displacement. For Nirbhay, the idea seemed absurd. He said he would rather die than leave his village. Kajal loudly opined that they didn't aspire to urban facilities. She claimed they were happy in the village and would like to remain. Rishabh found the idea of displacing people for the sake of conserving the forest contrary to common sense (he exclaimed, "*Yeh toh ulto hi ho gayo*").

The children, it seemed, have still not lost hope, not having had to face the adversities of displacement that the elders had seen. They had also not been exposed as much as the youth to mainstreaming and its ideas of modernity. Faagram bhai, while reflecting on the kind of education that the community needs, talked about the need to nurture this kind of hope and a will to come together and voice dissent against injustice. Some members of the community, associated with the Kisan Adivasi Sangathan, have still not lost hope, and are fighting for their land rights, as reported in the FGD in Mandikhoh. They said "We are here since ages, the state has come now, how can they take away our land and forests?" In the FGDs in Bardha and Amjhira as well we learned that though there was a general acceptance that they had to move if the state asked them to, the people also questioned the state's idea of conservation as an exercise in preserving the exotic, the human-nature binary implicit in it, the top-down approach, and the inherent commercialisation.

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SCHOOL EDUCATION VIS-À-VIS STUDENTS' LIFEWORLD

Depiction of Forests and Conservation in School Textbooks

A relic of the colonial approach to education, the textbook remains the most important, pervasive tool to transact curricular content in Indian schools. For this study, we examined two chapters in detail. These were from the Madhya Pradesh state board science textbooks: "Forests: Our Lifeline" (Grade 7) and "Conservation of Plants and Animals" (Grade 8). While the chapter on forests is the penultimate chapter in the grade 7 science textbook (out of a total of 18 chapters), the chapter on conservation appears as the seventh of the 18 chapters in grade 8. Both these chapters were examined for their portrayal of the forest, the idea of conservation, and of forest-dependent communities in the textbooks. We also explored the possibilities, if any, in these chapters to connect with the lived experiences of children in whose lives forests are an integral part.

The narrative in a nutshell

The chapter "Forests: Our Lifeline" is set in a town next to a forest, where a group of children can be seen playing in a park. There they meet an elderly scientist, Prof. Ahmad, who tells them about a town meeting where a plan to clear up part of the forest to set up a factory was discussed. While the children are very surprised that anyone would oppose this decision that would give jobs to many people, Prof. Ahmad explains why forests are important. Since the children had never been to the forest, a visit is planned for them to learn more about the forest. Prof. Ahmad accompanies the children and they meet a boy from the neighbouring village, Tibu, who is taking his cattle to graze but ends up accompanying the group. Through observations and discussions, students in the story get to explore, discuss, and describe what forests are, what they look like, the variety of trees found there, and the interdependence between different components of forests.

The chapter "Conservation of plants and animals" in grade 8 opens by revisiting the chapter on forests from the previous grade and continues with the same storyline. Two key characters—Paheli and Boojho—have visited a forest with Prof. Ahmad and met Tibu and are keen to share their experiences. A group of their classmates who have recently been to Bharatpur Sanctuary are equally eager to share their stories. Other children in the class talk about other wildlife sanctuaries and bioreserves in India that they have heard about. Establishing that almost everyone in the classroom has either been to a wildlife sanctuary or bioreserve, or are familiar with it, the chapter moves on to discuss deforestation, its causes and consequences, the need for wildlife conservation, biospheres and national parks, some relevant terminologies and concepts such as endemic species, Red Data Book, and ways to address deforestation. The discussion takes place in the context of an upcoming visit to Pachmarhi Bioreserve organised by Prof. Ahmad for the children.

Who are these chapters addressed to?

Both chapters seem to be written with the intent to introduce the ideas of forest and conservation to those students for whom these are not lived experiences. This is evident in the following quote from the chapter:

> *Prof Ahmad realised that the children had not visited a forest*. The children also wanted to know

more about the forest, so they decided to visit it with Prof Ahmad. (grade 7 science textbook, p. 206, emphasis added)

Also, the children who are the protagonists in the narrative seem to have enough resources to plan visits to various wildlife sanctuaries. What stood out in the Hindi version of the chapters, was the difficulty level of the language and excessive usage of Sanskritised terms such as *pragrahan*, *vikshobh, sankatapann jantu*, and *punah chakran*. These terms were to comprehend even for those of us who are native Hindi speakers. While it would perhaps be difficult to completely avoid complex terminology while teaching science, this kind of language with a heavy Brahmanical influence would alienate Adivasi students. The chapters seem to be more relatable to the urban, higher class and higher caste students even when the issues they attempt to address are relevant to Adivasi students. Also, in the discussion on the effects of deforestation, while ecological effects like global warming are discussed, the colossal effect it could have on communities dependent on forests is not given any consideration.

Portrayal of forests

Although forests are described as a habitat for plants and animals, there is a heavy emphasis on forests as an essential resource for human beings. For example, the narrative in the chapter on forests, though falling within an environment-friendly frame, concludes with a utilitarian perspective of the forest:

Prof Ahmad, asked children to sum up the importance of forests. The children wrote: Forests *provide us* with oxygen. They protect soil and provide habitat to a large number of animals. Forests help in *bringing good rainfall in neighbouring areas*. *They are a source of medicinal plants, timber, and many other useful products*. We must preserve our forests. (grade 7 science textbook, p. 215, emphasis added)

Similarly, a panel on deforestation and its effects in the same chapter concludes, "Deforestation will endanger *our* life and environment. Think, what we can do to preserve our forests" (p. 216). One of the three activities in the chapter asks students to look around their homes and name objects made out of forest resources. The chapter in grade 8 requires students to recall this activity and think of the shortage of such products if deforestation continues. There is a feature at the end of each chapter in these textbooks summarising the content for students. While this pedagogical choice of telling the students "What you have learnt" is questionable, the point we want to draw attention to is that in grade 7, this section stresses that "we get various products from the forests surrounding us". Picking up from where this chapter ends, the chapter in the next grade on "Conservation of Plants and Animals", opens by saying, "A great variety of plants and animals exist on earth. They are *essential for the well-being and survival of mankind*" (grade 8, p. 77, emphasis added). Later in the chapter, it is said that even small animals should not be ruthlessly killed because "By killing them we are harming *ourselves*" (p. 83). This indicates a rather anthropocentric way of looking at nature, where the safety of nature is justified and sought after only to fulfil human need. We note that the description of forests in the textbooks does not include any cultural or spiritual aspects of the relationship that people traditionally living in or near forests have with them. Forests are depicted as mere "objects" for investigation for their function and use.

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In addition to text descriptions, images used in the chapter on forests also help one understand how a forest has been visualised in the textbooks. The first image in the chapter on forests is an aerial view of a forest with dense tree cover on hills. A couple of other pictures illustrate the crown shapes of trees, canopies, and understoreys. Then there are two images showing forests as a habitat for various animal species, an image of the forest floor with dried leaves, and one illustration showing the interdependence of plants, soil, and decomposers. There is a picture with a collection of various forest products. The forest chapter has photographs of trees such as neem, sheesham, bamboo, and semal.

It is noteworthy that the trees mentioned in the chapter are mostly known for commercial purposes (teak, semal, bamboo), or known commonly (neem, mango). This representation of trees as commodities, their only value lying in commercial use, implies that nature is merely a pool of resources to be extracted and reflects an anthropocentric rather than an ecocentric worldview. However, *mahua*, a tree that has shared a cultural connection with many tribes in Central India and has in fact been one of the major sources of livelihood for them, does not figure anywhere in the chapters. When it comes to discussing animals and birds, both chapters largely focus on exotic, exclusive, and endangered species such as the giant squirrel, tiger, cheetah, and wild buffalo. This indicates a view of nature as an exotic other. Contrast this with how children portrayed nature in their drawings and while talking about forests. They included small living beings like ants and caterpillars that we come across in everyday life, and even not-so-appealing ones like leeches too in their depictions. The textbook does not include even simple prompts inviting the knowledge that Adivasi students have about the local diversity of plants and animals in forests. A more significant concern, we wish to point out, is the exclusion of Adivasi epistemes, values, practices, and experiences related to forests in the dominant narrative.

Another example of such an exclusion is the kind of forests depicted in the textbook chapters. The forests visited by the children in the chapters have been described as highly dense with a closed, continuous canopy: "The sun was barely visible through the leaves of the trees, making it quite dark inside the forest." (grade 7 science textbook, p. 208). While later, the chapter does acknowledge that the type of trees varies from forest to forest, depending upon climatic variation, it does not talk about the diversity of forests in India. Not all forests are dense and evergreen like tropical rainforests. In fact, the forests that children visit in the narrative of the grade 8 textbook are dry, deciduous forests of Central India. Without an acknowledgement of such diversity of forest landscapes, the chapter risks giving a generalised, over-simplified, and stereotypical picture of forests for learners who have not been to forests while denying the experience of many students who live near forests, although it may be a different kind from what is portrayed.

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Portrayal of the idea of conservation

Having first examined how the chapters argue for the need for the conservation of forests, we analysed what approach towards conservation the textbook argues for and which kind of efforts towards conservation it acknowledges. The analysis revealed two significant concerns and gaps in the chapter: A) there is a complete lack of acknowledgement of any community-led efforts in conserving forests, and B) there is no mention whatsoever of the dire effects of the state's conservation projects on Adivasi and other forest-dwelling communities.

Who is responsible for destroying forests?

While discussing the reasons for the loss and degradation of forests, the chapter on forests factors in both the people in villages adjacent to forests (for usurping land for agriculture and living) and development projects alike. In the story of the chapter, the children visit Tibu's village on the fringes of a forest they had just been to and learnt-

> … about the history of the village. It surprised them that the villages and the agricultural fields of that area were created after clearing the forest about sixty years ago. Tibu's grandfather told them that when he was young, the village was not as large as it was now. It was also surrounded by forests. Construction of roads, buildings, industrial development and increasing demand of wood created pressure on the forests and it started vanishing. (grade 7 science textbook, p. 214)

On similar lines, the chapter on conservation lists factors leading to deforestation:

> Trees in the forest are cut for some of the purposes mentioned below:
> 1. Procuring land for cultivation.
> 2. Building houses and factories.
> 3. Making furniture or using wood as fuel.
>   (grade 8 science textbook, p. 77)

It is factually incorrect not to consider the huge difference in the scale of extractive pressures that small communities put on the forests and those exerted by the industries, urban markets, and infrastructure projects (Ghosh, 2016). Adding insult to injury, the chapter on conservation goes on to say, "…It is a pity that even protected forests are not safe because people living in the neighbourhood encroach upon them and destroy them" (grade 8 science textbook, p. 82). The chapter's take, however, remains non-specific, generalised, and diplomatic when it comes to acknowledging the role of the state-industry nexus in harming the forest. While people living in or near forests are directly implicated in destroying forests, actors are not mentioned in the case of harm done by infrastructure, development, and industrial projects. The unfairness of this dominant discourse (that does not take into consideration the varied scale of consumption by different actors) is a concern that Faagramji from Kisan Adivasi Sangathan also voiced while talking to us. He said, "hundreds of trees were cut during a recent road widening exercise of the National Highway (NH46) passing through Kesla but if an Adivasi is found taking a log to repair his house, it is treated like a war on the India-Pakistan border" (Excerpt from interview transcript).

Who bears the responsibility of conservation?

While the government is shown in the role of a torchbearer leading the way for forest and wildlife conservation, community-level efforts are given only a passing remark in the textbook chapter on conservation. The following excerpt from the chapter reflects the recognition the chapter gives to the state initiatives of conservation:

> Madhavji explains to the children that apart from our personal efforts and efforts of the society, government agencies also take care of the forests and animals. The government lays down rules, methods, and policies to protect and conserve them. Wildlife sanctuaries, national parks, biosphere reserves, etc., are protected areas for conservation of plants and animals present in that area. (grade 8 science textbook, p. 78)

The chapter leaves out the pivotal role that local communities have played in conserving forests for centuries. Several notable and milestone movements and conservation initiatives in the country illustrate this long tradition of conservation among Adivasi communities. Traditionally, conservation has been part of the Adivasi culture with practices such as reserving parts of a forest as *Devrai* or sacred groves (Dar et al., 2019). The chapter also turns a blind eye to the emotional, cultural, and spiritual connection that traditional inhabitants of forests have with it. By not acknowledging these traditions and relationships, textbooks are not only keeping students away from knowing the holistic picture but are responsible for the dissemination of biased information against forest-dependent communities.

Indifference towards the effect of state conservation projects on the Adivasi people

After talking about the causes and grave consequences of deforestation, the chapter on conservation presents only government reserved forest projects "protected from any disturbance" as a way for conserving forests and wildlife:

> To protect our flora and fauna and their habitats, **protected areas** called sanctuaries, national parks and biosphere reserves have been earmarked. Plantation, cultivation, grazing, felling trees, hunting, and poaching are prohibited there. (grade 8 science textbook, p. 78, emphasis in original)

The chapter seemingly supports the colonial idea of "fortress conservation" in creating protected areas which exclude indigenous communities living there treating them as encroachers (Robbins, 2007). Instead of seeing forests as socio-ecological systems (Berkes, 2004), the chapter revolves only around wildlife and does not take into consideration the well-being of people living in and close to forests. While there is a mention of protecting tigers as a part of national heritage and the establishment of tiger reserves, the issue of mass displacement due to such reserves finds no mention in the chapter. What has remained a challenge and a concern in conservation projects in the country remains an equally worrisome concern in textbook portrayals as it does not problematise the top-down character of such projects and the misguided belief that all human activity leads to disturbance to the natural order.

There are several instances in the chapter on conservation where it gives the impression that conservation projects are indeed pro-people. For instance, aims of the Forest Conservation Act (1980) are discussed as "preservation and conservation of natural forests *and meeting the basic needs of the people living in*

or near the forests" (grade 8 science textbook, p. 85, added emphasis). Similarly, biosphere reserves are defined as "Large areas of protected land for conservation of wildlife, plant, and animal resources *and traditional life of the tribals* living in the area" (grade 8 science textbook, p. 78, added emphasis). However, there is no discussion on how much harm the conservation efforts (through reserved forests or protected areas such as national parks) have caused to forest-dwelling communities and how these efforts would protect the rights of those people.

Portrayal of Adivasis

Our analysis of the two chapters shows that the textbook discourse invisibilises Adivasi communities' experiences and relationships with forests. Their role in protecting and conserving forests and wildlife and their plight as a result of conservation initiatives are not acknowledged and neither are their funds of knowledge and traditional practices. In addition, generalised statements such as "...forests are not safe because people living in the neighbourhood encroach upon them and destroy them" (grade 8 science textbook, p. 82) direct blame Adivasis, misrepresenting Adivasi communities as those responsible for destroying forests.

Another caricature of the community that the chapter presents:

> Rock shelters are also found inside the Satpura National Park. These are evidence of prehistoric human life in these jungles. These give us an idea of the life of primitive people. Rock paintings are found in these shelters. A total of 55 rock shelters have been identified in Pachmarhi Biosphere Reserve. Figures of animals and men fighting, hunting, dancing, and playing musical instruments are depicted in these paintings. Many tribes still live in the area. (grade 8 science textbook, p. 82)

In this excerpt, talking about tribal people in the context of "primitive" people and their lifestyle is problematic as it could give a false and stereotypical impression of Adivasi lifestyle to urban children.

Teachers' Views on Students' Funds of Knowledge

Having explored students' funds of knowledge in the context of forests and conservation and how the textbook depicts and connects with these knowledge resources that Adivasi communities have, we wanted to understand how teachers view students' funds of knowledge and what challenges and possibilities they foresee in connecting learning with students' knowledge, experiences, values, and concerns in their teaching. The discussion here is based on interviews with government schoolteachers from three of our focal villages. Classroom observations could not be conducted as part of this study. When the study was conceived and also for a large part of the duration of the study, learning in schools had been disrupted due to the COVID-19 pandemic. Even when schools reopened, teachers were busy with government programmes dealing with the loss of academic learning due to the pandemic. There was a lot of emphasis on fostering the basic skills of reading, writing, and numeracy. The teachers had more administrative work than before because of capacity-building workshops for these new programmes, and collection and distribution of new textbooks and workbooks from the education office in Kesla in addition to their regular non-academic but important tasks such as distribution of uniforms among students and keeping records of everything. The teachers reported that they barely had a chance to teach the syllabus amidst all of these activities. A shortage of teachers only added to their woes.

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The three teachers we interacted with were from three different villages all from non-Adivasi backgrounds. They had different levels of professional qualification and experience, summarised in Table 5.

Table 5. Profile of participant teachers

Pseudonym	Professional Qualification	Teaching Experience
Ms. Uma	M.A. in Hindi and political science	10 years
Mr. Rakesh	M.Sc. and B.Ed.	20 years
Ms. Sona	M.Sc. and B.Ed.	4 years

All the three teachers did not live in the village where they taught'. While the other two teachers had permanent jobs, Ms. Sona was a contract teacher[5] at the time we met her. She had acquired an M.Sc. and B.Ed. degree while being on the job.

Teachers' understanding of students' lifeworlds
All three teachers seemed to be aware of the rich knowledge that Adivasi students have about animals and plants. For example, their students recognise different kinds of leaves and plants, they know their medicinal use, they also know about the habits of wild animals, and what grows in which season. The teachers attributed this knowledge to students' involvement in farming and forest-related activities. The teachers knew about their dependence on forest produce (firewood, *mahua*, *gulli* and *tendu* leaves), the major crops grown in this belt (rice, wheat, and maize), festivals unique to the region (such as *Pola* and *Hari Jiroti*), traditions associated with the festivals (e.g. *Danda*, a Korku dance form using bamboo sticks), and the vulnerabilities arising from the unique locations of villages bordering Satpura Tiger Reserve and the Tawa Dam.

Disruption in regular school attendance due to all the work that children do for their households was also a major concern that Ms. Usha and Mr. Rakesh raised. Ms. Usha explained that children do lot of work at home. They take goats to graze, pluck *kada chirota* from the jungle, collect and bundle *tendu* leaves, pick *mahua* flowers, and contribute to various activities on their farms such as tilling, sowing, protecting crops from birds and animals, and harvesting. She remarked, "It is more important for them than studies… As soon as there is a gap, they tend to forget what they learned in school." (Interview transcript, Ms. Usha) Adivasi children have busy routines tied to farming and forest seasons. This is one of the biggest challenges of working with them. They contribute to household earnings by directly getting involved in farming or taking care of siblings and doing other household chores while their parents are away for work. It becomes, therefore, a vicious cycle. The parents themselves are not literate and cannot support their children's formal education. Teachers often perceive this as Adivasi parents' negligence towards education. A common grievance all participant teachers had was - "There is no supporting environment for studies in their homes" (Interview transcript, Ms. Usha). The teachers were aware of the harsh reality

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[5] Madhya Pradesh is one among many states which has been proactively hiring teachers on contract since 2000. This helps the government keep the wage burden low and allows hiring of teachers for more schools. However, this also creates a hierarchy among teachers. While in absence of adequate preparation and systemic support, it is unfair to expect contract teachers to do well on teaching assignments, their lower salaries, fixed term contracts, and inadequate qualification "lead to divisions and dissatisfaction on the one hand, and make the profession vulnerable to arbitrary actions at the local level by those who have no professional training or authority on the other" (Govinda & Josephine, 2005, p. 9).

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that children are expected to contribute to their family earnings for survival. Expressing empathy towards Adivasi students' plight, Ms. Usha said, "We understand their situation and that is why we don't put much pressure on them."

Yet they have no choice but to gather them for school examinations even as they are in the midst of farming or foraging, especially for the year-end examination which always overlaps with the *mahua* season. The position paper on the problems of scheduled caste and scheduled tribe children (NCERT, 2006) recommends that there should be flexibility in the school calendar taking the local context into account. However, why such a policy recommendation is not translated into practice remains a question for further investigation. Mr. Rakesh told us that these government schools in the buffer region fall under the Tribal Development Department and not the Education Department. We wonder if this means that at least these schools can adjust to the tribal calendar.

Ms. Usha was also concerned about the low proficiency in reading and writing skills among her students and saw this as a significant barrier to learning. "Every time we have to start from basics… They can copy text from the board but can't write a sentence on their own. There are very few kids in the school who can properly write in Hindi" (Interview transcript, Ms. Usha). She also mentioned a library initiative at her school that lets students borrow storybooks from the library and read at their own pace. This initiative is meant to inculcate a culture of reading and writing among students.

Ms. Sona was highly respectful of the children and shared that most students were fond of her and had no fear, but still some found it difficult to mingle. On probing for the reason, she said "Students from Peepalpura (a particular neighbourhood on the outskirts of the village) are a bit scared to come to the school. They are from the ST community." She reported that other Adivasi students who live in the area adjoining the school are accustomed to the Yadav community and are more comfortable at the school. However, students from the other neighbourhood studied only with children from their own community in primary grades. When they enrol into the middle school outside their village, they are wary of others. She said that those students who continue to come regularly to school overcome hesitation and fear with time, and talked about her efforts to make students comfortable in her class - "I make sure they are not discriminated. We treat them equally, pay attention to everyone."

A difference in the language students speak may be one of the reasons students do not open up easily. The teachers did not seem familiar with the languages in the region. They reported that they did not know Korku or Gondi, which was a little surprising, especially since two of the teachers had worked in the same school for at least a decade. Perhaps it wasn't very essential since all the students and most community members can also speak a dialect of Hindi. However, there are also differences in this dialect with influences from students' native languages. Ms. Usha said "…we could not follow them initially. Later, we picked it up a little bit. Their language is different. They even refer to us as *tu* and not *aap!*". In mainstream Hindi, *Tu* is a word (for "you") that is commonly used among friends or same-aged individuals to refer to each other. It is considered disrespectful to use *tu* to address elders. *Aap* is the apt word which is supposed to communicate respect in the way one addresses another person, especially elders. However, Adivasi languages and relationships between children and elders are more egalitarian and do not have such distinctions (Sarangpani, 2003). The Adivasi languages are also not gendered. Ms.

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Usha pointed out that girl students often say *"Khaoonga, Jaoonga"* which are Hindi verbs to indicate male gender forms for "I will eat" and "I will go" respectively. We have also observed during our interactions with children and adults in the community, especially Korku individuals, that they use gendered verbs interchangeably. While these mistakes in language use are seen as low proficiency and as a barrier to communicating with the children, perhaps understanding the egalitarian aspects of the native Adivasi languages could ease teachers' discomfort and prevent the devaluation of their dialects. However, Ms. Usha also pointed out that it is important that students learn official Hindi well because it is expected that students write their exams in the standard language or risk bad grades.

Among aspects of the regional Adivasi culture that were appreciated, was the solidarity that the community has within itself. Mr. Rakesh commented that the Korku people in the village are always united, and that "they ensure that no one in the community sleeps hungry" (*Koi apna bhookha na rahe*). If there is a function in the village, everyone pitches in and contributes. If there is a meeting in the village, they all turn up. He also described them as hardworking and caring. They had often provided him with food and stay when he had been stranded in the village owing to working late and not being able to go home because of the lack of a connecting road.

Connecting learning with students' contexts: Experiences and Challenges
When we asked how the textbook content could be related to students' in-depth experience, Ms. Usha and Mr. Rakesh could not recall the textbook content on forests. Ms. Usha and another guest teacher who teaches science in the same school brought up the topic of agriculture. Interestingly they remarked that they were expected to teach modern methods of farming—about tractors, new machines, tube wells, pumps—and not their traditional ways. This is consistent with our observations on the chapter that it glorifies mechanised modern methods of farming. Indeed, the position paper on the problems of scheduled caste and scheduled tribe children (NCERT, 2006) also notes that "its colonial character which privileges western modernisation" has remained a defining feature of the Indian school curriculum even after attempts were made, post-independence, to supposedly indigenise it (p. 25).

Ms. Sona emphasised that teaching must be connected with students' experiences and only then can students relate to it. She stressed that "Students get interested if things are connected to their lives. They ask questions. They share experiences." She shared that anything related to agriculture, plants, and animals makes the class come alive and students spontaneously share their experiences when these topics are discussed in the class. She also seemed familiar with the kind of experiences Adivasi students have from their interactions with their families as well as in the work context.

Ms. Sona also brought up the dilemma intrinsic to discussing topics like deforestation which are linked with student's lives (like getting firewood from forests) yet do not address their perspectives and needs. She said that her students often ask how, if they don't cut trees like it says in their textbooks, will they make their food? She said she struggles with no answers to such questions. It is ironic that the perspective with which textbooks discuss forests and conservation is in clear contrast with Adivasi communities' relationships with forests, and if students have to do well in examinations, they have to parrot the dominant narrative. On the question of the importance of discussing issues pertinent to students' lives, for example, conservation initiatives like Satpura Tiger Reserve and the ripple effects they have on the

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community, she felt that such issues need to be discussed but also expressed her inability to do so because of the lack of information.

The teachers we talked to recognised that students from the Adivasi community have experiences and knowledge related to the many kinds of work that they do. However, various challenges lie in their way when it comes to connecting students' lifeworlds with school education ranging from excessive administrative work to the lack of sufficient information about contextually relevant issues, to the mandate of textbooks to teach prescribed content like modern, mechanised ways of farming.

DISCUSSION AND CONCLUSION

The study sheds some light on Adivasi students' rich knowledge of their neighbourhood and values, and practices related to forests and conservation that shape their worldviews. We have discussed several instances of this in section 3 of the report. The analysis of textbook chapters on the theme of forests and conservation and teachers' views is presented in section 4. Here, we summarise the key findings and draw implications for developing alternative learning material that is relevant for the Adivasi communities of the region.

Juxtaposing the Textbook and Students' Everyday Discourses on Forests and Conservation

Natural and social environment are part of a continuum for Adivasi students. In their minds, there is no boundary between their village and the neighbouring forest. They understand the forest as an ecosystem and the various ecological connections between its elements. The forest is also a safety net that fulfils their everyday needs, especially in adverse times. Their cultural and spiritual relationship with forests is reflected in their deep attachment and mutualistic connection. They practice restraint in using forest resources and feel a sense of responsibility towards forests. They believe in and practice a peaceful coexistence with other animals in the wild and see forests as commons. With a sense of ecological justice, they acknowledged the rights of even the smallest of non-human species over their habitat. Clearly, they did not see forests as only utilitarian even though they have a critical dependence. In fact, the forest is an integral part of their expansive sense of self.

On the contrary, the textbooks' approach to forests and wildlife conservation is utilitarian and anthropocentric. Forests are seen as a pool of resources and all arguments are made for conservation with human welfare as the prime concern. One of our FAs from the community remarked during a discussion meeting that the chapter seems to have been written by someone who has never lived close to a forest. There is a stark difference between the pictures depicting forests in the textbook and the forest drawn by students which is indicative of the difference in their perspectives. While the pictures in the textbooks mostly present a view of forests from afar showing only canopies, students drew a detailed image of the forest and its inhabitants (including the everyday activities and livelihoods of the local community).

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Food chains are described briefly in the chapter on forests, explaining that many food chains are linked. Without delving any deeper, it says that removing components, like trees, disturbs the entire chain. Students in our study, during the workshop, described elaborate mechanisms of such interconnections and what would happen if they were disturbed. It is ironic that the textbooks directly implicate forest-dwelling communities for harming forests for their personal benefit and yet, unabashedly talk about their rights to forests. The conservation model that underlies the discourse in these textbooks is that of "fortress conservation" which is:

> … a conservation model based on the belief that biodiversity protection is best achieved by creating protected areas where ecosystems can function in isolation from human disturbance. Fortress, or protectionist, conservation assumes that local people use natural resources in irrational and destructive ways, and as a result cause biodiversity loss and environmental degradation. Protected areas following the fortress model can be characterized by three principles: local people dependent on the natural resource base are excluded; enforcement is implemented by park rangers patrolling the boundaries, using a "fines and fences" approach to ensure compliance; and only tourism, safari hunting, and scientific research are considered as appropriate uses within protected areas. (Robbins, 2007, p. 704)

Another important insight that emerged in the analysis, is the class and caste character of the textbook discourse evident in the examples discussed in the two chapters, and the Sanskritised language used to present the content. Lived experiences, knowledge, practices, questions, and concerns of forest-dwelling communities do not get any mention in these chapters. The phrase "by non-Adivasis, for non-Adivasis" best captures this aspect of our analysis.

Since textbooks provide no space for the students of Adivasi communities to share their experiences, concerns, questions, or knowledge on issues so central to their lives, they exert a kind of "symbolic violence" on the students (Bourdieu & Paaseron, 1977). The exclusion and marginalisation of Adivasi epistemes, values, cultural ethos, and experiences in the mainstream discourse also reflects a colonial mindset that is premised on the epistemic supremacy of modern worldview over indigenous knowledge systems. Scholars such as Connell (2012) and Santos (2018) advocate decolonising the curriculum and argue that by recognising multiple ways of knowing, the world could advance the cause of social and environmental justice. What is, therefore, important from the point of view of social, environmental, and epistemic justice is to create a space where Adivasi students' knowledge and culture is valued, a space where they can freely share their experiences and critically engage with issues that matter to them. This would perhaps help bridge the wide gap between the school world and the lifeworlds of those students. The findings also reveal that while the teachers do recognise the vast landscape of Adivasi students' knowledge and experiences, they struggle to connect those with the school curriculum. Therefore, teacher professional development programs might consider (a) inducting teachers in systematically exploring their students' funds of knowledge, and (b) providing guidance on how they can connect them with school education.

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Based on our understanding of the students' funds of knowledge and our critique of the textbook discourse on forests and conservation, we will now discuss the key features of an alternative learning resource that we have developed as part of the study.

Centring the "Local" and "Critical" in Conceptualising Alternative Learning Resources

Advocates of critical science and environment education centred around the ideals of social and environmental justice urge for an issue-based curriculum organised around themes that are significant to students (Hodson, 2011). Layrargues (2000) insists that local environmental problems, as opposed to global environmental issues, provide a meaningful context closer to the lived experiences of the community and render possibilities of action. The importance of the local context in making learning meaningful to students has been emphasised by educators across the world who are concerned about students' alienation from their communities and the natural environment. The idea of a place-based education emerged in the mid-1990s to address this by providing students with opportunities to engage with the human and natural environments that they inhabit (Smith, 2013). It is equally essential for educators not to lose sight of the macro picture i.e., larger structures and processes while focusing on local. Thus, the idea of a "critical pedagogy of place" (Gruenewald, 2003) makes more sense to us while conceptualising an alternative learning resource. Informed by the ethic of eco-justice (Bowers, 2001), critical pedagogy of place has two broad and interrelated goals: 1) *Reinhabitation* which corresponds to identifying, recovering, and creating material spaces and places that teach us how to live well in our total environments, and 2) *Decolonisation* which calls for identifying and changing ways of thinking that injure and exploit other people and places (Gruenewald, 2003).

In the context of villages in Central India surrounded by Satpura forests, wildlife sanctuaries and rivers, the theme of forests, wildlife, and conservation provides affordance to raise questions that are meaningful to students from forest-dwelling communities that they can relate with easily. Projects in the name of environmental conservation like Satpura Tiger Reserve aim to protect the environment and wildlife, but they come at the cost of disrupting the lives of local Adivasi communities who have been living in the surrounding forests, rivers, and hills for ages. Sometimes this is seen as a sacrifice in the name of the greater good, but the irony is that only the poor are expected to sacrifice for others. Villages in the vicinity of conservation initiatives of the state live in constant fear of displacement.

Thus, having a dialogue with students of Adivasi communities similar to the Gond and Korku communities with whom we interacted in the course of this study will be crucial to develop a critical understanding of forests and their conservation. The discussion can be organised around questions such as: Whose forests are these? To whom do they belong—to the animals who live in them, the forest department, industries and other development projects, or the people who have been coexisting with the forests for many, many generations? Why are we losing our forests? Who is responsible for their loss and degradation? Who takes care of forests? Who benefits and who loses when wildlife conservation initiatives are pursued by governments? We believe that as communities whose lives are intimately connected with forests, Adivasi views and voices on these questions matter. It is ironic that while learning about forests and their conservation, their concerns and experiences remain side-lined. As argued earlier, this exclusion also results in epistemic injustice towards indigenous communities. Centred around locally relevant issues

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and aimed at developing a critical understanding of issues around forests and wildlife conservation, the teaching-learning module attempts to bring forth the in-depth knowledge, experiences, and relationships that Adivasi students and their communities have with forests, and their individual and cultural practices that show an ethic of care towards forests. It offers opportunities to comprehend and question issues around deforestation, its effects, and causes. Using headlines from newspaper articles, the module brings in the issue of scale at which different actors depend on forests and lead to their degradation, critiquing the prevalent model of development. The module further outlines the legal provisions for the rights of forest-dependent communities and discusses the state projects of conservation and their effects on local people while also giving examples of community-based conservation efforts in the region and elsewhere in India. Finally, it offers suggestions for concrete actions at the local level. The module questions the dominant idea of development and presents alternatives for more inclusive, community-based ways of conserving nature. We hope it will turn out to be a useful resource for teachers and educators working in similar cultural contexts.

Reflections on the Processes and Methods used in the Study

Having youth from the local Adivasi communities as co-researchers on the team, this study adopted a participatory research methodology. It seeks to bring local knowledge and ways of knowing of the communities we work with to the process of research (Morales-Doyle, 2017). This afforded collective perspective building and sharing of pertinent experiences, knowledges, and skills among team members. Working in informal learning centres, we had more time to discuss and have a shared vision of the aims and challenges of the kind of education we wanted to work towards—a justice-centred, culturally-relevant, critical, and transformative education that would be meaningful to Adivasi students. We had opportunities for such discussions in the capacity development sessions conducted regularly through fortnightly day-long meetings and bimonthly residential workshops. These sessions ranged from perspectives on teaching-learning, issues in Adivasi education and social justice, as well as content and pedagogy of science, mathematics, art, and language learning.

In the context of research, we had reflective discussions within the team on the objectives and methods of the study. FAs contributed significantly to vetting draft tools, gaining access to key informants, interacting with the community and children as part of data collection, and in making sense of the data. While discussing the questions during tool development workshops, they brought an insider and youth perspective which added to the perspectives of elders and children that we interviewed. Having them on board increased our accountability to the community with open discussions on what were we attempting to do and why, and what the outcomes of this study would be—a report that would just lie on the bookshelf or something that is accessible and useful to the children and the community at large. Other members of the team also have a diverse set of skills and experiences and each contributed accordingly. Some of us have a research background and experience in critical science education, some have worked with Adivasi communities for many years and are really good with building relationships and interacting with children, and some are good at capturing the moments during the process, to mention a few examples.

Being associated with Eklavya Foundation, we were able to draw on an extended base of resource persons for these workshops to enhance capacities and discuss our research ideas. For instance, we had sessions with Amit Bhatnagar, founding member of Adharshila learning centre (an innovative school for

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Adivasi children in Sendhwa, Madhya Pradesh). Discussions with individuals from other non-state, non-profit organisations in the region helped us understand the context and local issues better, get their inputs on the study, and share our emerging findings. We talked to members from the Kisan Adivasi Sangathan (which has been working for Adivasi and farmers' rights for more than 35 years now), SAHMET (which worked in Kesla for 15 years towards collective action on education and health), Pradan (which organises women's collectives on issues of livelihood) and Narmada Mahila Sangh (a volunteer-based institution of women which strives for equal citizenship rights for all). We also had an educative interaction on the Forests Rights Act 2006 (FRA) with a member from Vikas Samvaad, a Bhopal-based organisation which has worked with communities on building an understanding of policies and legal rights like FRA. Thus, as we had envisioned, we had a broad network and a base of work towards politicisation to draw upon for our study and with whom to share our work. Knowing of Eklavya's past and current work in the region made it easier to network with all these organisations and also education officials and teachers in the block.

For the dissemination of findings, in addition to a research report and a manuscript for journal submission, we have developed a learning module (both in English and Hindi) and an article for teachers (in Hindi). Though most suited to the context of Adivasi students and teachers in Central India, these tangible outcomes from the study may give an idea to teachers from similar contexts who could design a teaching sequence that is relatable and relevant to their students. Some of the children's write-ups and drawings are also published in a popular children's magazine *Chakmak*. There are more underway. In terms of implications for research, we believe that the insights from the study will advance the ongoing debate among scholars (Batra, 2021; Gupta & Padel, 2018) on whether and how Adivasi students' lifeworlds could be integrated with school education by demonstrating a possibility.

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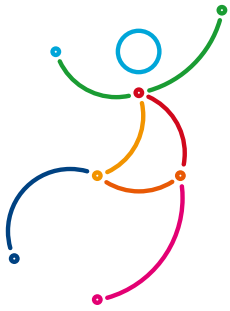
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Whose forests are these? To whom do they belong - To the animals who live in them, the forest department, industries and other development projects, or the people who have been coexisting with the forests for many, many generations? Why are we losing our forests? Who is responsible for their loss and degradation? Who takes care of forests?

As communities whose lives are intimately connected with forests, Adivasi views and voices on these questions matter. Yet, while learning about forests and their conservation, their concerns and experiences remain side-lined. This study attempts to explore the cultural and cognitive resources young and adult members of Adivasi communities in Central India have with regard to forests and conservation. It aims to document aspects of students' everyday knowledge and lifeworlds and explore the possibilities of connecting the same with school education.

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