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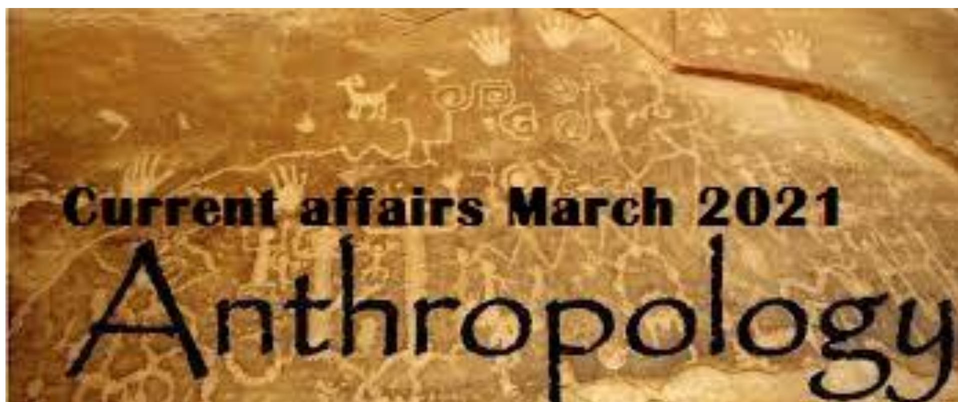

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PHYSICAL & ARCHAEOLOGICAL ANTHROPOLOGY

1. Neandertals had the capacity to perceive and produce human speech

Summary:

Neanderthals -- the closest ancestor to modern humans -- possessed the ability to perceive and produce human speech, according to a new study

Neanderthals -- the closest ancestor to modern humans -- possessed the ability to perceive and produce human speech, according to a new study published by an international multidisciplinary team of researchers including Binghamton University Associate Professor of Anthropology Rolf Quam and graduate student Alex Velez.

"This is one of the most important studies I have been involved in during my career," said Quam. "The results are solid and clearly show the Neanderthals had the capacity to perceive and produce human speech. This is one of the very few current, ongoing research lines relying on fossil evidence to study the evolution of language, a notoriously tricky subject in anthropology."

The evolution of language, and the linguistic capacities in Neanderthals in particular, is a long-standing question in human evolution.

"For decades, one of the central questions in human evolutionary studies has been whether the human form of communication, spoken language, was also present in any other species of human ancestor, especially the Neanderthals," said coauthor Juan Luis Arsuaga, professor of paleontology at the Universidad Complutense de Madrid and co-director of excavations and research at the Atapuerca archaeological sites in northern Spain. The latest study has reconstructed how Neanderthals heard to draw some inferences about how they may have communicated.

The study relied on high resolution CT scans to create virtual 3D models of the ear structures in *Homo sapiens* and Neanderthals as well as earlier fossils from the site of Atapuerca that represent ancestors of the Neanderthals. Data collected on the 3D models were entered into a software-based model, developed in the field of auditory bioengineering, to estimate the hearing abilities up to 5 kHz, which encompasses most of the frequency range of modern

human speech sounds. Compared with the Atapuerca fossils, the Neanderthals showed slightly better hearing between 4-5 kHz, resembling modern humans more closely.

In addition, the researchers were able to calculate the frequency range of maximum sensitivity, technically known as the occupied bandwidth, in each species. The occupied bandwidth is related to the communication system, such that a wider bandwidth allows for a larger number of easily distinguishable acoustic signals to be used in the oral communication of a species. This, in turn, improves the efficiency of communication, the ability to deliver a clear message in the shortest amount of time. The Neanderthals show a wider bandwidth compared with their ancestors from Atapuerca, more closely resembling modern humans in this feature.

"This really is the key," said Mercedes Conde-Valverde, professor at the Universidad de Alcalá in Spain and lead author of the study. "The presence of similar hearing abilities, particularly the bandwidth, demonstrates that the Neanderthals possessed a communication system that was as complex and efficient as modern human speech."

"One of the other interesting results from the study was the suggestion that Neanderthal speech likely included an increased use of consonants," said Quam. "Most previous studies of Neanderthal speech capacities focused on their ability to produce the main vowels in English spoken language. However, we feel this emphasis is misplaced, since the use of consonants is a way to include more information in

the vocal signal and it also separates human speech and language from the communication patterns in nearly all other primates. The fact that our study picked up on this is a really interesting aspect of the research and is a novel suggestion regarding the linguistic capacities in our fossil ancestors."

Thus, Neanderthals had a similar capacity to us to produce the sounds of human speech, and their ear was "tuned" to perceive these frequencies. This change in the auditory capacities in Neanderthals, compared with their ancestors from Atapuerca, parallels archaeological evidence for increasingly complex behavioral patterns, including changes in stone tool technology, domestication of fire and possible symbolic practices. Along these lines, the study provides strong evidence in favor of the coevolution of increasingly complex behaviors and increasing efficiency in vocal communication throughout the course of human evolution.

The team behind the new study has been developing this research line for nearly two decades, and has ongoing collaborations to extend the analyses to additional fossil species. For the moment, however, the new results are exciting.

"These results are particularly gratifying," said Ignacio Martinez, a professor at Universidad de Alcalá in Spain. "We believe, after more than a century of research into this question, that we have provided a conclusive answer to the question of Neanderthal speech capacities."

The study, "Neandertals and modern humans had similar auditory and speech capacities," was published in *Nature Ecology and Evolution*

2. Scientists see cross-group adoption of young bonobo apes in the wild for the first time

Scientists have witnessed bonobo apes adopting infants who were born outside of their social group for the first time in the wild.

Researchers, including psychologists at Durham University, UK, twice saw the unusual occurrence among bonobos in the Democratic Republic of Congo, in central Africa.

They say their findings give us greater insight into the parental instincts of one of humans' closest relatives and could help to explain the emotional reason behind why people readily adopt children who they have had no previous connection with.

The research, led by Kyoto University, in Japan, is published in the journal *Scientific Reports*.

Researchers observed a number of bonobo groups over several years in the Wamba area of the Democratic Republic of Congo.

The examples of cross-group adoption were seen between April 2019 and March 2020 before Covid-19 restrictions brought observations to a temporary halt.

Chio, aged between 52 to 57 years old, who is thought to be post-menopausal, was seen to adopt three-year-old Ruby who had been part of another unknown group.

Marie, an 18-year-old bonobo was also seen to adopt Flora, who is estimated to be two-and-a-half-years-old, after Flora's mother disappeared from a separate group.

Neither Chio nor Marie, who had already had their own offspring, had any pre-existing family connections to the adopted infants or any strong social connections with the youngsters' biological mothers, yet both readily adopted the young bonobos.

Both adoptive mothers carried, groomed, nursed, and shared food with their adopted young. Ruby and Flora were also both observed suckling at their adopted mothers. In the case of Ruby, she might have been suckling for comfort as Chio is unlikely to have been producing milk.

The researchers say this caring nature is evidence of bonobos' strong attraction to infants and high tolerance of individuals, including immature youngsters, from outside of their normal group.

Bonobos, along with chimpanzees, are humans' closest relatives and the researchers say their discovery helps us to understand adoption among people.

Marie-Laure Poiret, a PhD Research Student, in the Department of Psychology, at Durham University, UK, said: "Usually in wild animals adoptive mothers are related to

orphaned infants or sometimes young females will adopt orphans to improve their own care-giving behaviours, which increases the future survival chances of their own offspring.

"This means that adoption in non-human animals can usually be explained by the adoptive mother's own self-interest or pre-existing social relationships.

"The cross-group adoption we have seen in the cases of both Chio and Ruby, and Marie and Flora, is as surprising as it is wonderful and perhaps helps us explain adoption among humans, which cannot be explained purely by the benefits received by adoptive mothers.

"Instead it is fair to say from the examples we have seen in bonobos that adoption in humans can be explained by a selfless concern for others and an emotional desire to offer care to someone who we have no previous connection with."

The bonobo groups included in this study have been observed by scientists since the 1970s and researchers have come to know the individuals in each of the groups.

Research lead author Nahoko Tokuyama, Assistant Professor in the Primate Research Institute and Wildlife Research Centre at Kyoto University, Japan, who has spent more than ten years studying bonobos in the Democratic Republic of Congo, said bonobos "never ceased to amaze".

Dr Tokuyama added: "Although cases of adoption were observed in non-human primates, the adoptive mother and

adoptees almost exclusively belonged to the same social group.

"This may be because adoption is very costly behavior and because non-human primates form stable groups and have a good ability to recognise other group members.

"It's well known that groups of bonobos sometimes encounter and associate with each other, and that those belonging to different groups can interact tolerantly.

"However, I had never imagined that bonobos could adopt infants from outside of their groups, so these cases were quite surprising."

The researchers plan to continue their observations of the bonobo groups once Covid-19 restrictions allow.

3. New Evolutionary Theory: The Human Brain Grew as a Result of the Extinction of Large Animals

A new paper by Dr. Miki Ben-Dor and Prof. Ran Barkai from the Jacob M. Alkow Department of Archaeology at Tel Aviv University proposes an original unifying explanation for the physiological, behavioral and cultural evolution of the human species, from its first appearance about two million years ago, to the agricultural revolution (around 10,000 BCE). According to the paper, humans developed as hunters of large animals, causing their ultimate extinction. As they adapted to hunting small, swift prey animals, humans developed higher cognitive abilities, evidenced by the most obvious evolutionary change — the growth of brain volume from

650cc to 1,500cc. To date, no unifying explanation has been proposed for the major phenomena in human prehistory. The novel theory was published in *Quaternary Journal*.

In recent years more and more evidence has been accumulated to the effect that humans were a major factor in the extinction of large animals, and consequently had to adapt to hunting smaller game, first in Africa and later in all other parts of the world. In Africa, 2.6 million years ago, when humans first emerged, the average size of land mammals was close to 500kg. Just before the advent of agriculture this figure had decreased by over 90% — down to several tens of kg.

According to the researchers, the decrease in the size of game and the need to hunt small, swift animals forced humans to display cunning and boldness — an evolutionary process that demanded increased volume of the human brain and later led to the development of language enabling the exchange of information about where prey could be found. The theory claims that all means served one end: body energy conservation.

The researchers show that, throughout most of their evolution, early humans were apex (top) predators, specializing in hunting large game. Representing most of the biomass available for hunting, these animals provided humans with high fat levels, an essential source of energy, and enabled a higher energy return than small game. In the past, six different species of elephants lived in Africa, comprising more than half of the biomass of all herbivores hunted by humans. Initial evidence from East Africa indicates

that homo sapiens only emerged in that area after a significant decline in the number of elephant species in certain regions. Comparing the size of animals found in archaeological cultures, representing different species of humans in east Africa, southern Europe and Israel, the researchers found that in all cases there was a significant decline in the prevalence of animals weighing over 200kg, coupled with an increase in the volume of the human brain.

"We correlate the increase in human brain volume with the need to become smarter hunters," explains Dr. Ben-Dor. For example, the need to hunt dozens of gazelles instead of one elephant generated prolonged evolutionary pressure on the brain functions of humans, who were now using up much more energy in both movement and thought processes. Hunting small animals, that are constantly threatened by predators and therefore very quick to take flight, requires a physiology adapted to the chase as well as more sophisticated hunting tools. Cognitive activity also rises as fast tracking requires fast decision-making, based on phenomenal acquaintance with the animals' behavior — information that needs to be stored in a larger memory."

The evolutionary adaptation of humans was very successful," says Dr. Ben-Dor. "As the size of animals continued to decrease, the invention of the bow and arrow and domestication of dogs enabled more efficient hunting of medium-sized and small animals — until these populations also dwindled. Toward the end of the Stone Age, as animals became even smaller, humans had to put more energy into hunting than they were able to get back. Indeed, this is when

the Agricultural Revolution occurred, involving the domestication of both animals and plants. As humans moved into permanent settlements and became farmers, their brain size decreased to its current volume of 1300-1400cc. This happened because, with domesticated plants and animals that don't take flight, there was no more need for the allocation of outstanding cognitive abilities to the task of hunting."

Prof. Barkai: "While the chimpanzee's brain, for example, has remained stable for 7 million years, the human brain grew threefold, reaching its greatest size about 300,000 years ago. In addition to brain volume, evolutionary pressure caused humans to use language, fire and sophisticated tools such as bow and arrow, adapt their arms and shoulders to the tasks of throwing and hurling and their bodies to the prolonged chase, improve their stone tools, domesticate dogs and ultimately also domesticate the game itself and turn to agriculture."

Prof. Barkai adds: "It must be understood that our perspective is not deterministic. Humans brought this trouble upon themselves. By focusing on hunting the largest animals, they caused extinctions. Wherever humans appeared — whether homo erectus or homo sapiens, we see, sooner or later, mass extinction of large animals. Dependence on large animals had its price. Humans undercut their own livelihood. But while other species, like our cousins the Neanderthals, became extinct when their large prey disappeared, homo sapiens decided to start over again, this time relying on agriculture."

4. DNA Testing of Immigrants Is Unethical

The collection of genetic biodata for the reunification of families must safeguard individuals' agency, provide meaningful informed consent, and protect privacy.

DNA testing has been used for nearly two decades to prove family relationships for visa petitions as part of the United States Refugee Admissions Program. Questionable as that may be, the use of DNA testing for immigration purposes has expanded in recent years to include testing detained immigrants, including separated minors at the United States–Mexico border. This latest development has created significant bioethical concerns, leaving many scholars, including me, questioning how we got here and what do we do next.

Image description: Thin bands of color are stacked atop each other to form columns with numerous hues including pink, blue, red, yellow, teal, and green. A number of these columns are lined up side-by-side. iStock

It started in the summer of 2018, when US Customs and Border Protection (CBP) officers under the Trump administration began separating migrant children from their families at the United States–Mexico border. The US government proposed using DNA testing to determine if a biological relationship exists between children and their accompanying adults. Advocates argued that DNA tests could reunite separated families and also prevent human trafficking. Critics such as Zeid Ra'ad al-Hussein, the United Nations high commissioner for human rights, Amnesty

International, and members of Congress from both sides of the aisle argued against the plan, leading the Trump administration to put the plans temporarily on hold.

However, in October 2019, the *New York Times* reported that the Department of Homeland Security (DHS) planned to restart DNA testing, and in January 2020 that plan became a reality. It entailed collecting a much more comprehensive genetic profile than previous pilot programs and storing the genetic profiles indefinitely in the FBI's Combined DNA Index System (CODIS) database, accessible by state and law enforcement authorities.

Then, in September 2020, *BuzzFeed News* reported that it had acquired access to a draft US government policy, which detailed plans for collecting multiple forms of biometric data, including DNA, to establish bona fide genetic relationships between adults and minors in DHS custody.

While it is true that DNA testing would offer a scientifically valid way of confirming familial relationships, we must ask, Is it ethical to collect and store this personal information to address the problem of 666 children still separated from their parents?

No person should be coerced into a genetic test for reunification purposes under such a state of duress.

An underlying argument against DNA testing in immigration is grounded in the concept of genetic literacy. As an applied anthropologist, I've studied and spoken up about consumer genetics over the past four years. In my research on the direct-

to-consumer genomics (DTCG) market, I've found that the majority of participants lack an appreciation and understanding of the ethical concerns related to DNA testing.

For example, in a survey of 353 participants, I found that 52 percent did not read the privacy policy and terms of service when buying the test and thus lacked a firm understanding of the risks and considerations. Similarly, many participants in my interviews made statements similar to the following two comments:

Yeah, I mean I was like, you know, I think it's all about genetics, so it's not something I personally understand, but these are companies that do genetic testing like they seem pretty sure. You know, like scientific facts. (35-year-old male interviewed in 2018)

I don't think it's significant because I don't know. It's just life. It's not my address or my social security number. I don't feel like I could have a monetary loss on this one so I can affect my health. I mean, I don't understand how my DNA being in the hands of somebody is going to hurt me. (48-year-old male interviewed in 2018)

I share these examples to illustrate the cavalier attitude and behaviors of many consumers, including me, who actively sought out a DNA test and opted to buy it. But if willing consumers demonstrate these behaviors, what about immigrants who are compelled or coerced to take a test? Will they be afforded a meaningful informed consent process? Will they truly understand all of the potential risks of having their

biocapital stored in perpetuity in the CODIS database, or how that may be used, potentially against them, in the future?

I argue, no. As my colleagues and I first contended in a poster presented at the 2018 American Anthropological Association Annual Meeting, adults in the United States appear ill-equipped to understand the complexity of genetic testing. Likewise, we argued that separated minors who likely have little genetic literacy would not be able to provide appropriate informed consent, potentially even with adult supervision. Finally, no person should be coerced into a genetic test for reunification purposes under such a state of duress. Given that position, I offer the following suggestions to the incoming Biden-Harris administration to reduce the harm if the US government continues with its policy.

Any person should have the right to refuse a DNA test without harm to their immigration status or case and should be presented with other options, even if that extends their case review time. Consequently, any minor separated from their guardian should not be coerced to take a DNA test by any third party in the absence of their legal guardian.

Is it ethical to collect and store this personal information to address the problem of 666 children still separated from their parents?

If an individual is asked to take a DNA test, they should be provided meaningful informed consent by a bilingual third-party nongovernment scientist or health care professional trained in delivering informed consent and the risks of providing genetic biodata.

If the government insists on using DNA tests for family identification or reunification, it should be used for that purpose exclusively. Furthermore, if a DNA test is administered, it should only be used to verify family relationships where all parties have agreed to be tested. Finally, if a DNA test proves a familial relationship, the family should be reunited, and the DNA sample and derived data destroyed.

Protecting a person's agency, providing meaningful informed consent, and ensuring their privacy is protected should be considered a prerequisite for the use of any DNA testing, especially in the context of compulsory testing for use in immigration.

The incoming Biden-Harris administration should reverse the inhumane border practices of the Trump administration as quickly as possible, and ensure no more harm to immigrants. No person should ever be coerced into taking a DNA test, especially not separated minors.

5. The Guardian view on Amazonian cave art: a story about the environment, too

n the past week, remarkable images of ancient cave art have hit the headlines: rock paintings made in South America around 12,000 years ago. The art, created on rock faces in the Serranía de la Lindosa, on the northern edge of the Colombian Amazon, is a riot of ochre-coloured geometrical pattern, handprints, and images of animals and humans. Until recent excavations, the works of art had been unknown to the international community. Their exuberant creativity

will soon be revealed to a broad audience in the UK thanks to the Channel 4 series Jungle Mystery: Lost Kingdoms of the Amazon.

The people who made these works of art were, it is believed, among the earliest humans to occupy the region, after migrations across what is now the Bering Strait some 25,000 years ago. Preliminary study of the iconography of the art has led scholars to speculate that among the deer, tapirs, alligators, bats, serpents, turtles and porcupines, long-extinct megafauna are also represented: mastodons, American ice-age horses, giant sloths, camelids.

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This creativity, this 12,000-year-old print of human hands, and this extraordinary depiction of long-extinct species, is remarkable and moving. But the ongoing archaeological studies in this area may also begin to tell an important story about the environment – and how humans have interacted with the precious Amazonian rainforests. The archaeologists, a team led by Francisco Javier Aceituno of the Universidad de Antioquia, Gaspar Morcote-Rios of the Universidad Nacional de Colombia and José Iriarte, of Exeter University, also discovered stone tools and animal and plant remains, all of which add to the knowledge of the region – and suggest many questions, too.

The extinction of the megafauna is itself an intriguing problem: was it caused by climate change, by humans hunting them to extinction, or by a combination of factors? No megafauna bones were found at the sites investigated, so

the people who painted the rock faces were either not big-game hunters or dealt with the carcasses of large animals elsewhere.

What has been found, however, is evidence of many species of useful plants, including 10 species of palm; the researchers think that these people may have been beginning to manage the forest – not just adapting to it passively, but changing it. By around 4,000 years ago, scholars have recently shown, communities in the forest were fertilising soil, planting Brazil-nut trees and chocolate, and clearing land in a very limited way for crop cultivation. These communities, much more populous than previously assumed, achieved food security and were well-nourished – and their presence actively promoted the astonishing biodiversity of the rainforest. Their direct successors are today's indigenous populations whose existence is so cruelly threatened. The glorious ancient cave paintings are not just a spectacle, they are the roots of a way of life that human greed has done its best to destroy – but on which the ecological richness of the Amazonian forest, and in turn all of humanity, depends.

6. Neanderthals helped create early human art, researcher says

When Neanderthals, Denisovans and homo sapiens met one another 50,000 years ago, these archaic and modern humans not only interbred during the thousands of years in which they overlapped, but they exchanged ideas that led to a surge in creativity, according to a leading academic.

Tom Higham, a professor of archaeological science at the University of Oxford, argues that their exchange explains “a proliferation of objects in the archaeological record”, such as perforated teeth and shell pendants, the use of pigments and colourants, decorated and incised bones, carved figurative art and cave painting: “Through the early 50,000s, up to around 38,000 to 40,000 years ago, we see a massive growth in these types of ornaments that we simply didn’t see before.”

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Between 40,000 and 150,000 years ago, our cousins included the Neanderthals, Homo floresiensis, Homo luzonesis and the Denisovans.

“Now it’s just us; there aren’t any other types of humans on the planet,” Higham says. “We always thought that the origins of art and complex cognitive thought was the hallmark of us – modern humans. This was called the human revolution. The basis of this hypothesis, which came out in the 1970s, was that humans came out of Africa and brought with them a cognitive ability that no other types of humans – particularly Neanderthals – had ... Now what we think is happening is that … it’s not restricted to modern humans at all.

“If our groups were interbreeding, then cultural transfer – the exchange of ideas, thoughts and language – may well also have been happening. Humans are good at picking up new ideas.”

The latest research, which draws on recent findings by international scientists and archaeologists, will feature in Higham's forthcoming book, The World Before Us: How Science is Revealing a New Story of Our Human Origins, to be published by Viking on 25 March.

He writes that Earth was a primevally complicated place 50,000 years ago: "To borrow from the words of Tolkien, we should think of it as a veritable 'Middle Earth' in terms of the diversity of forms of the human family that existed at the time. There were five, six, or even more, different types of human present in various parts of the world."

In the book, through the latest scientific and technological advances – including radiocarbon dating and ancient DNA analysis – Higham explores how we became the only humans on Earth and how our forebears lived – "and live on in our genes today".

He is a world expert in technology that is revolutionising what we know about previous human species. Archaeological and genetic discoveries are transforming our understanding of our ancestors.

Higham is among academics who have been working in Siberia, where a new type of human, the Denisovans, was discovered in a remote cave in 2010. From a finger bone fragment so tiny that it would previously have been unidentifiable, they were able to extract crucial DNA details that link them to people spread across a vast area of Eurasia, including south-east Asia.

He says: “Denisovans are closely related to Neanderthals and to us. As with Neanderthals, we interbred with them. People today, depending on where they are geographically, have a small amount – and, in some cases, big amounts – of Denisovan DNA.

“At the site of the Denisova cave, we’ve also uncovered evidence that intriguingly suggests that Denisovans too might have been involved in making personal ornaments and doing the kinds of things that hitherto we only thought were the exclusive preserve of us and later Neanderthals.”

That evidence includes rings and beads made out of mammoth tusks and ostrich eggshells. “Were these and the other ornaments made by both Denisovans and modern humans?” Higham asks.

New research means that all sorts of artworks and decorative items that have been assumed to be linked to the earliest modern human could have been created by Neanderthals or Denisovans, in the absence of other evidence.

Higham says: “The weight of evidence now suggests that if there was cultural transmission, it probably occurred in both directions, and that the earliest evidence for the beginnings of complex behaviour in Europe was prior to the widespread arrival of Homo sapiens.”

The last known resting place of *Homo erectus*, one of the most successful human ancestors and the first to walk fully

upright, has been traced to a floodplain near the longest river on the Indonesian island of Java.

A dozen partial skulls and two shinbones, discovered in a bonebed near the Solo river in the 1930s, but never reliably dated, have now been placed at between 108,000 and 117,000 years old after a comprehensive survey of the site.

The age of the remains marks Central Java as *Homo erectus*'s final stand, and confirms the species as the longest surviving human ancestor by far, its presence stretching across the evolutionary tree for about 1.8m years.

"This is the largest collection of *Homo erectus* fossils at a single site in the world and dating it has always been important," said Russell Ciochon, an anthropologist at the University of Iowa. "This was a very long-lived species and we have now nailed the date of their last appearance."

Homo erectus racked up a score of firsts. It was the first of our predecessors to have modern human-like body proportions, and may have been the first to cook food. The species emerged in Africa nearly 2m years ago and became the first to leave the continent, spreading across Asia and down into Indonesia. It hung on in Java long after it had vanished elsewhere.

Excavations at Ngandong, Indonesia in 2010. Photograph: Russell Ciochon/Nature

The bones belong to a haul of 25,000 mostly animal fossils that were unearthed by Dutch geologists as they excavated the Ngandong terrace, a floodplain along the Solo, between 1931 and 1933. The bones became lodged in the floodplain after being washed downriver, but how the individuals died is unknown. Scientists have long tried to date the site, but have come up with wildly different estimates from 27,000 to half a million years old.

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With staff from the Institute of Technology in Bandung, Indonesia, the research team spent 16 years dating the site with a panoply of modern techniques. Their work was aided by the grandchildren of one of the Dutch geologists, who provided maps and journals that, once translated into English, pointed to the location of the original bonebed.

Writing in the journal Nature, the scientists describe how they worked out the age of the *Homo erectus* fossils by dating the landscape and new animal fossils excavated from the Ngandong terrace. They dated stalagmites in the caves of nearby mountains to show that the mountains themselves rose up at least half a million years ago and diverted the Solo into the Kendeng hills where the Ngandong terrace sits.

Further dating revealed that the Ngandong terrace itself formed between 140,000 and 92,000 years ago. Finally, the researchers located the original bone bed and dug up hundreds more fossils. None belonged to *Homo erectus*, but rather a smattering of animals from the Ngandong tiger to water buffalo and elephants.

An exposed bonebed at Ngandong. Photograph: Russell L. Ciochon Univ. of Iowa/Nature

The work produced 52 new dates for the different parts of the site, which Richard Bailey, a researcher at Oxford, fed into a computer model. This weighted the dates according to the uncertainties of the different techniques and came up with a final age range for the fossils.

“Knowing when a species was alive and when they eventually died out is important for understanding where they sit in the evolutionary tree, who they interacted with,

and why they became extinct," said Kira Westaway, who co-led the study at Macquarie University in Sydney.

Given the age of the remains, *Homo erectus* did not overlap with *Homo sapiens*. But the prehistoric species may have mingled with the enigmatic Denisovans, an early human known from the cold caves of Siberia, which may have reached south-east Asia.

The dating shows that *Homo erectus* finally went extinct on Java when the environment grew warmer and the woodland was replaced by rainforest.

Josephine Joordens, a paleoecologist at the Naturalis Biodiversity Center in Leiden, said it was an "impressive" piece of work. "It's an important result because it nails down the time span of this highly successful, cosmopolitan and long-lasting species," she said.

Mark Maslin, a researcher at UCL, said: "Even more exciting is the realisation that around 100,000 years ago, there existed at least seven or eight different hominin species including our own, *Homo sapiens*. From this complex bush of ancestors only one species emerged, our own, which finally arrived in Java 35,000 years after the last known appearance of *Homo erectus*."

But John Hawks, an anthropologist at the University of Wisconsin-Madison, raised doubts about the identity of the fossils. "The question I'm asking is why should we think that these fossils are *Homo erectus*?" he said. "It's hard for me to see a population of fossils from Java 120,000 years ago and not assume they were probably Denisovan."

7. Indigenous people vital for understanding environmental change (Ecological Anthropology Paper-1)

How local knowledge can help manage ecosystems and wildlife

Summary:

Grassroots knowledge from indigenous people can help to map and monitor ecological changes and improve scientific studies, according to new research. The study shows the importance of indigenous and local knowledge for monitoring ecosystem changes and managing ecosystems. The team collected more than 300 indicators developed by indigenous people to monitor ecosystem change, and most revealed negative trends, such as increased invasive species or changes in the health of wild animals.

The study, published in the *Journal of Applied Ecology*, shows the importance of Indigenous and local knowledge for monitoring ecosystem changes and managing ecosystems. The team collected more than 300 indicators developed by Indigenous people to monitor ecosystem change, and most revealed negative trends, such as increased invasive species or changes in the health of wild animals. Such local knowledge influences decisions about where and how to hunt, benefits ecosystem management and is important for scientific monitoring at a global scale.

"Scientists and Indigenous communities working together are needed to understand our rapidly changing world," said lead author Pamela McElwee, an associate professor in the

Department of Human Ecology in the School of Environmental and Biological Sciences at Rutgers University-New Brunswick. "Many Indigenous peoples have unique abilities to notice ecosystems altering before their eyes by using local indicators, like the color of fat in hunted prey or changes in types of species found together. Scientists wouldn't be able to perform these kinds of observations over the long run for many reasons, including costs and the remoteness of some areas. So Indigenous knowledge is absolutely essential for understanding the cumulative impacts of biodiversity loss and ecosystem degradation."

Indigenous and local knowledge is the practical information that people use to manage resources and pass on between generations. Such knowledge benefits conservation initiatives and economies that depend on natural resources in vast areas of the world.

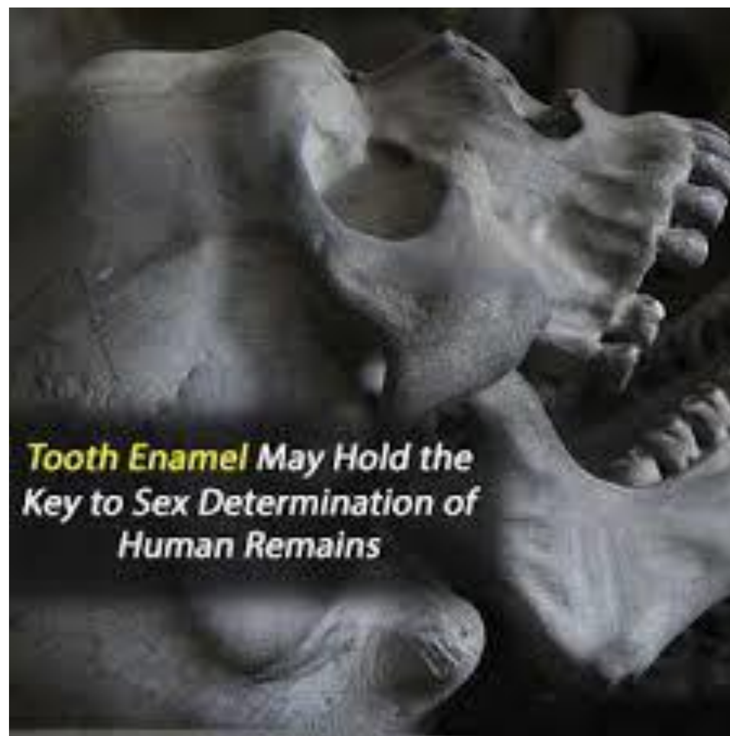
The study follows the Global Assessment Report on Biodiversity and Ecosystem Services released last year by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. That report was the first global ecological assessment to use Indigenous and local knowledge as a source of evidence.

The new study, by researchers at many institutions who were part of the global assessment, provides background on how the report tapped into Indigenous knowledge systems and lessons learned. Working with these local sources of information in ecological research and in management requires a deliberate approach from the start, additional

resources and engagement with stakeholders reflecting diverse worldviews, McElwee said.

"Partnering with Indigenous peoples can help scientists and researchers understand how natural and cultural systems affect each other, identify trends through diverse indicators and improve sustainable development goals and policies for all," she said.

8.Archaeologists use tooth enamel protein to show sex of human remains



A new method for estimating the biological sex of human remains based on reading protein sequences rather than DNA has been used to study an archaeological site in Northern California. The protein-based technique

gave superior results to DNA analysis in studying 55 sets of human remains between 300 and 2,300 years old.
The work is published July 17 in *Scientific Reports*.

The method targets amelogenin, a protein found in tooth enamel, said _rst author Tammy Buonasera, postdoctoral researcher working with Glendon Parker, adjunct associate professor in the Department of Environmental Toxicology at the University of California, Davis. The technique was developed in Parker's laboratory.

Buonasera, Parker, Jelmer Eerkens, professor of anthropology, and colleagues compared three methods for sex determination: the new proteomic method; DNA analysis; and osteology, or analysis of the size, shape and composition of the bones themselves. They applied these methods to remains from two ancestral Ohlone villages near Sunol, California. The site is being excavated by the Far West Anthropological Research Group of Davis in collaboration with the Muwekma Ohlone tribe.

Amelogenin is a protein found in tooth enamel, the hardest and most durable substance in the human body.
The gene for amelogenin happens to be located on both the X and Y sex chromosomes, and the amelogenin-Y protein is slightly different from amelogenin-X.
The method works by retrieving a tiny amount of protein from a tooth. All proteins are made up of a chain of

amino acids, so the protein is analyzed to give the amino acid sequence, which then defines the protein. Each of the 20 naturally occurring amino acids is specified by a three-letter code in DNA, so it is possible to work backward from the amino acid sequence and figure out the likely DNA code.

Superior to existing methods
The researchers were able to determine the sex of all of the remains using the new protein method and all but have using DNA methods. Results from osteology and proteomics agreed in almost all cases, although examining bones themselves was only effective for about half the skeletons.

The protein method allowed them to estimate sex for children, which is not possible from osteology. It was reliable even when the signal from DNA was weak. "This is a more sensitive technique for older skeletons where we would expect more DNA degradation," Parker said.Being able to determine the biological sex of human remains provides a greater window into the persona of each individual. Anthropologists are interested in determining biological sex because sex interacts with health and can have a large impact on how people form an identity and are treated within a society, Eerkens said.

"Almost every human society around the world incorporates sex and gender as a way to classify people, and these can

affect your status and who you associate with in society," Eerkens said. While gender and biological sex are not the same thing, they are linked, so the ability to estimate sex gives archaeologists important insight when attempting to understand the cultural aspects of gender, which are not as readily preserved.
For example, in a society based on small villages, people often have to find mates outside their village. Depending on cultural rules, either men or women will leave the village to marry.

SOCIO – CULTURAL ANTHROPOLOGY

1. Early humans may have survived the harsh winters by hibernating

Bears do it. Bats do it. Even European hedgehogs do it. And now it turns out that early human beings may also have been at it. They hibernated, according to fossil experts.

Evidence from bones found at one of the world's most important fossil sites suggests that our hominid predecessors may have dealt with extreme cold hundreds of thousands of years ago by sleeping through the winter.

The scientists argue that lesions and other signs of damage in fossilised bones of early humans are the same as those left in

the bones of other animals that hibernate. These suggest that our predecessors coped with the ferocious winters at that time by slowing down their metabolisms and sleeping for months.

The conclusions are based on excavations in a cave called Sima de los Huesos – the pit of bones – at Atapuerca, near Burgos in northern Spain.

Over the past three decades, the fossilised remains of several dozen humans have been scraped from sediments found at the bottom of the vertiginous 50-foot shaft that forms the central part of the pit at Atapuerca. The cave is effectively a mass grave, say researchers who have found thousands of teeth and pieces of bone that appear to have been deliberately dumped there. These fossils date back more than 400,000 years and were probably from early Neanderthals or their predecessors.

The site is one of the planet's most important palaeontological treasure troves and has provided key insights into the way that human evolution progressed in Europe. But now researchers have produced an unexpected twist to this tale.

In a paper published in the journal *L'Anthropologie*, Juan-Luis Arsuaga – who led the team that first excavated at the site – and Antonis Bartsiokas, of Democritus University of Thrace in Greece, argue that the fossils found there show seasonal variations that suggest that bone growth was disrupted for several months of each year.

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They suggest these early humans found themselves “in metabolic states that helped them to survive for long periods of time in frigid conditions with limited supplies of food and enough stores of body fat”. They hibernated and this is recorded as disruptions in bone development.

The researchers admit the notion “may sound like science fiction” but point out that many mammals including primates such as bushbabies and lemurs do this. “This suggests that the genetic basis and physiology for such a hypometabolism could be preserved in many mammalian species including humans,” state Arsuaga and Bartsiokas.

The pattern of lesions found in the human bones at the Sima cave are consistent with lesions found in bones of hibernating mammals, including cave bears. “A strategy of hibernation would have been the only solution for them to survive having to spend months in a cave due to the frigid conditions,” the authors state.

They also point to the fact that the remains of a hibernating cave bear (*Ursus deningeri*) have also been found in the Sima pit making it all the more credible to suggest humans were doing the same “to survive the frigid conditions and food scarcity as did the cave bears”.

The authors examine several counter-arguments. Modern Inuit and Sámi people – although living in equally harsh, cold conditions – do not hibernate. So why did the people in the Sima cave?

The answer, say Arsuaga and Bartsiokas, is that fatty fish and reindeer fat provide Inuit and Sami people with food during winter and so preclude the need for them to hibernate. In contrast, the area around the Sima site half a million years ago would not have provided anything like enough food. As they state: “The aridification of Iberia then could not have provided enough fat-rich food for the people of Sima during the harsh winter - making them resort to cave hibernation.”

A museum exhibit of a Neanderthal family, who faced brutal winters. Photograph: Nikola Solic/Reuters
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“It is a very interesting argument and it will certainly stimulate debate,” said forensic anthropologist Patrick Randolph-Quinney of Northumbria University in Newcastle. “However, there are other explanations for the variations seen in the bones found in Sima and these have to be addressed fully before we can come to any realistic conclusions. That has not been done yet, I believe.”

Chris Stringer of the Natural History Museum in London pointed out that large mammals such as bears do not actually hibernate, because their large bodies cannot lower their core temperature enough. Instead they enter a less deep sleep known as torpor. In such a condition, the energy demands of the human-sized brains of the Sima people would have remained very large, creating an additional survival problem for them during torpor.

"Nevertheless, the idea is a fascinating one that could be tested by examining the genomes of the Sima people, Neanderthals and Denisovans for signs of genetic changes linked with the physiology of torpor," he added.

2. Proving" the language/culture connection

Over the weekend, several anthropologist called attention to this research report produced by Princeton University (link to full report here). The headline touts the research with the claim that "Machine Learning reveals role of culture in shaping the meaning of words". My response, and that of many others, was immediately snarky – we didn't particularly need computers to tell us something that has been amply demonstrated by the entire field of linguistic anthropology for the better part of a century, and by plenty of people paying attention for even longer. There was a bit of pushback on these comments, which ultimately all share a certain thematic element – that even if we already knew this, we, as linguistic anthropologists, should welcome this work, and the attention being paid to it, as a new methodology that supports what we know and do.

The problem with this claim is…it doesn't do that at all. And here, I have to own up to the fact that my own initial flippant response absolutely does suggest that it does, as I noted "the machines have caught up to my opening lecture in intro to linguistic anthropology". It is, of course, true that culture shapes meaning within languages, and that we teach that as a central principle of the discipline. The problem is, what the

authors of this study mean by that and what we mean by that are fundamentally different things, as becomes apparent when you read beyond the headline. At a certain point, I hoped that reading the paper itself would mitigate some of the concerns I had, but alas, while obviously written in a somewhat less hyperbolic way, the conceptual foundation, methodological application, and interpretation involved in this paper is, to my mind, a frustratingly flawed contribution to the study of the intersection of language and culture, for reasons outlined below.

The crucial issue for me is how the authors define ‘culture’ and establish a quantified version of ‘cultural similarity’. In order to make this machine-based analysis work, culture has to be reduced to a checklist of features. To do so, the authors did in fact draw on anthropology – specifically, the Ethnographic Atlas available at D-PLACE, which is based on the work of GP Murdock and his students. There’s an interesting anthropological rabbit hole to go down in examining the

disagreements between Murdock and Edward Sapir, and critically considering Murdock's emphatically 'scientific' and mathematical approach to studying human social differences. What I would ask the authors in this case, though, is whether they have chosen this approach to studying culture after a careful consideration of historical and contemporary thinking about the concept, or mainly because it is the one that allows them to fit the question of culture into the computational mold they wish to explore. Even the assumption that "languages" map neatly onto "cultures", as opposed to containing multiple ways of speaking, or 'languages' being spoken by diverse groups of people, or to having culture defined by multilingual and multivocal practices, doesn't hold within contemporary linguistic anthropology.

Further, and relatedly, while the Princeton report about the study touts it as covering a remarkable number of languages, 41 is in fact an absolutely tiny drop in the bucket of global linguistic diversity — a point that becomes even more apparent when you look at the actual list of languages, which include 25 from the Indo-European family, 4 Turkic languages, 3 Uralic, and 1 each from the Afro-Asiatic (Arabic), Sino-Tibetan (Chinese), Dravidian (Tamil), Kartvelian (Georgian), Japonic (Japanese), and Koreanic (Korean) families, as well as Basque.

While I was pleasantly surprised at a few of these inclusions (Georgian and Basque wouldn't fall in to the 'usual suspects' list), most of the list is extremely predictably narrow. Further, one might ask whether these labels even hold up all that well

– which Englishes are represented here, or which versions of Spanish, Chinese, or any other "language"? This narrowness is made even worse as the analysis selects further and further for focus on Indo-European languages, because those are the ones about which the kind of diachronic language change information being used to classify degrees of linguistic/historical similarity is most available. The authors don't justify this choice beyond the convenience level – or really, at all.

Even to find the list of languages, one has to follow the links to get to the 300 pages of supplementary material that they provide. This indicates to me that they don't think their choice of languages used to make conclusions about 'universal' meanings and patterns of language/culture relationships requires explanation. A broader consideration of language at a global level would require attuning to the complexity of the concept of 'words', to the ways in which meaning is established in practice, or to the implications of things like polysynthesis in how these forms of 'universality' emerge.

To illustrate what I mean, consider how the study talks about kinship terms and alignment. For the authors, the machine analysis demonstrates that this category of terms (at least the most 'common' ones – the examples they give are 'daughter', 'son', and 'aunt') tend to translate into other languages with a high degree of shared meaning. I have assigned to introductory ling anth classes to talk about how many cultural beliefs we take for granted, such as the role of names and kinship terms, are in fact demonstrably diverse. Blum's work is a good example that illustrates how "meaning" is not reducible to semantic "content" or "translatability", but rather has to be understood in terms of social practice. In other words, even asking the question of "what does this kinship term *mean*?" requires us to understand how a given culture approaches such "meaning".

But ethnographic analyses of kinship practices would suggest that even if the terms ‘translate’, they are used in extremely diverse ways. In many parts of Latin America, the Spanish/Portuguese terms ‘tia’ and ‘tio’, which translate as ‘aunt’ and ‘uncle’ are used to refer to almost any adult engaging with children, so during fieldwork in Brazil, I would often be introduced to kids by adults saying something like “Essa tia vem do Canadá” (“This auntie comes from Canada”). Sticking with languages represented on the list here, Susan Blum’s work on “Naming Practices and the Power of Words in China” is one that

This starts to get at what I mean when I say that what this work ‘proves’ does not, in fact, align (pun intended, #sorrynotsorry) with what linguistic anthropologists talk about when they study how meaning is different across cultural contexts. There are major assumptions in the computational work that contradict the understandings of language and culture that most of us work within, and in particular, ignore the ways in which we examine language as a dynamic social practice. The ethnological Atlas material is, of course, not the only criterion the study uses for identifying cultural proximity, but digging in to other aspects of the analysis reveals similar assumptions. As my friend Lavanya Murali noted to me, the treatment of geographic proximity and shared linguistic history, for example, doesn’t really contend with the dynamics of how people interact across linguistic boundaries such that similarities can be produced through interaction, rather than as an inherent property of language — with both these elements, in turn, abstracted

from an idea of “culture”. All of this, for me, calls the conceptual framework that this research relies upon into question, and at the very least, demonstrates that this work doesn’t support linguistic anthropologists’ claims about language and culture. As such, this is *not* a matter of

saying the same thing with different methodological evidence, but rather saying something completely different based on an entirely distinct set of assumptions about language and culture – ones that, in fact, I work really hard to teach students to examine as ideological claims rather than fundamental truths. This even presents something of a meta-commentary, as it's worth noting that meaning doesn't even align *within* languages, and that the meaning of 'meaning' isn't always clear and translatable — I could go on, but you get the point.

In addition to all this, I want to ask — why this research? Why ask these questions? This has been a central piece of the critique I have brought to my less-sarcastic Twitter comments, and that still holds after reading the study itself. The researcher interviewed makes the claim that this is the first "data driven" approach to the question, and further explains that the motivation comes from a desire to improve upon the time-consuming need to do things like "conduct long, careful interviews with bilingual speakers who evaluate the quality fo translations".

The first comment is illustrative of a widespread belief that ethnography is not data, and that valorizes the quantitative and mathematical as "proof". As many people noted, one of the reasons this raises our hackles is that we have been "proving" the interrelationships between language and culture in any number of ways for years, and this work actually doesn't engage with *any* of that material, preferring instead to jump back several decades and use a dataset that

conforms to pre-existing assumptions. The second point is more nuanced, but equally worth addressing – what's wrong with long, careful interviews? In fact, one of the reasons that the list of languages used here is so limited is because those are the ones for which a sufficient amount of long, careful interviews, recorded material, and myriad other forms of data are available. It's not clear to me, then, that this kind of work in any way does away with the need to develop that material in the first place, raising the question of what it accomplishes. As I noted in tweets, the decisions about what questions to ask are ones that deserve scrutiny, because resources are spent investigating these questions, which means those resources aren't available for other questions. And if resources are being consumed doing research that ignores and dismisses work on apparently related topics, it does have a negative impact on that work – so, speaking for myself, as a linguistic anthropologist, it's disappointing and frustrating to see not only the promotional elements of this work, but to see how the project itself represents the questions that we even need to understand regarding language and culture.

INDIAN & TRIBAL ANTHROPOLOGY

1. Nomads for 8 Years, This Duo Quit Their Corporate Jobs to Document Forgotten Tribal Tunes!

The tribal heritage of India remains obscure and underappreciated across all corners, and that is precisely what The Forgotten Songs Collective aims to change.

When I first came across the extraordinary journey of Akshatha Shetty and Piyush Goswami, I couldn't help but remember these lines penned down by American poet Robert Frost.

Once a part of the young workforce that fuels the corporate sector, the duo decided to bid goodbye to the monotony of routine work and cloistered workspaces.

They wanted to dedicate their lives to art and philosophy and find ways to bring both disciplines together to do socially relevant work.

The year was 2010 when 'Rest Of My Family' took flight as an idea and philosophy, and the next three years went in transforming it to something real and practical.

As the ideating went in the background, Piyush started working on various independent photography, fiction and non-fiction films, while Akshatha explored the field of journalism.

“It was during this period that we both started travelling to rural and tribal communities, as frequently as our resources allowed us to. We started sharing our findings through photo-stories. We did this for a while and initially thought that writing about social issues would draw the attention of those who have resources to make a difference to the lives of the ignored sections of the society. But over time, we became convinced that writing/documenting alone seldom results in a constructive impact on the individuals and communities that are being written about. We knew we had to do more,” says the duo to **The Better India**.

Akshatha and Piyush travelled and lived with families and communities—who were all strangers. However, the love and care they received led them to realise that all social and cultural walls that separate people were a human construct and didn’t really exist.

“The more we travelled and met new people, the more our social walls melted away. Over time, fear and suspicion were replaced with love and trust. We realised that everyone we met and lived with was a part of our own family. And, when someone is part of your family, just writing about their challenges and needs isn’t enough. You have to try your best to find a solution to these challenges,” they share.

They gave up their homes, belongings and everything else that they owned to live a life on the road, and dedicated themselves to a single idea and cause—Rest Of My Family.

Three years later, they decided to embark on a nonstop one-year drive through rural and tribal India, that was made possible because of a successful crowdfunding campaign.

Since then, they have documented and lived with numerous rural and tribal communities.

“Throughout the drive, we documented various communities and issues across six states. In Maharashtra, we covered farmer issues in drought-hit regions, and in Karnataka, it was the situation of Devadasis in Koppal, and the social issues faced by the Lambani community in Chincholi. In Bastar, we documented the situation of adivasis and the Naxal-state conflict, while in Odisha it was the issues faced by the Bonda tribe. We have also covered the issue of human trafficking and other challenges near the India-Bangladesh border in West Bengal and the current situation of the Biate community in Assam,” they share.

But that’s not all. Akshatha and Piyush also try to do everything in their capacity to support communities that they document and live with.

In the last three years, they have been able to accomplish the following:

1) Sponsor the education of over 400 underprivileged children across six states.

2) Provide a community bus to a remote fisherman community in Dhanushkodi.

3) Facilitate regular medical camps through a rural healthcare program in Bastar.

4) Introduce biogas to the Bonda tribe by setting up a biogas project in Bonda Hills (Odisha).

5) Mobilise drinking water access project in arsenic contaminated areas of North 24 Parganas district (West Bengal)

6) Form the Kharthong Organic Farmers Producer Company (KOFPO) in Dima Hasao (Assam) to help farmers get fair rates for their organic produce.

Besides these remarkable projects that the duo has spearheaded in the last eight years, there is one noteworthy initiative that we'd like to particularly highlight—The Forgotten Songs Collective (TFSC).

TFSC is a multi-media art collective initiated by Rest Of My Family's Artist Connect programme in collaboration with Vinayaka, an experimental electronic musician.

The programme aims to preserve, raise awareness about dying tribal and folk music and cultures of India through multi-media artist collaborations with musicians, visual artists, projection mapping artists, filmmakers and other artists.

As a part of the Artist Connect programme, an artist would have to travel with Akshatha and Piyush to remote tribal settlements in various states to tell stories of and raise awareness about different social challenges. Additionally, they will also work towards reviving and celebrating tribal and folk music of India through musical releases and audio-visual performances.

It is entirely possible that a greater part of the country must have never heard of the Biate tribe from Assam or any of their cultural legacy. In fact, the tribal heritage of India remains obscure and underappreciated across all corners, and that is precisely what TFSC aims to change.

"Our work revolves around living with, understanding, documenting and supporting tribal and rural communities. In all our years of travelling and working, we have constantly felt that folk and tribal music of India has been largely ignored and is underrepresented. These obscure music forms and songs have such unique imprints of history, culture, identity and life struggles of their respective communities. While the thought has lived with us for a long time, it began taking real shape during our first stay with the Biate tribe in Dima Hasao, Assam in 2017. During that time we met an old man named Epa Lallura in a remote village called Jahai," they recall.

The man was a part of the last generation of the tribe that remember their folk songs, stories and rituals. He told the new visitors about how after their community's conversion to Christianity and the increasing exposure to the modern world, a lot of their history, music and culture was being forgotten.

"Epa Lallura's knowledge of his culture, music, nuances of their original language is unparalleled. His pain seeing his culture fade away with passing days was so real that it caught our attention. He genuinely wanted to do whatever possible to keep Biate music, and history alive. After meeting him, we knew we had to do something to address his concern for their music and culture," they share.

"We discussed this idea with Vinayaka, who in his musical journey has been trying to find ways to tell real stories with

social relevance. He was immediately on board, and the project came to life," they explain.

Another incident that took place during their stay in Thingol further motivated them to pursue TFSC. When the Biate elders gathered to sing songs of their past and perform ancient rituals, it was their host Lalpuia's mother who played the gong at night and sang along with the rest.

"Lalpuia stood up and danced to the rhythm. He had tears in his eyes. Ever since the death of his little brother many, many years ago, his mother had stopped singing. That particular day, when the elders gathered on a moonlit night around the fire to rekindle their past, she sang again. 'Enu (enu in Biate means mother) never sang again after his death. Today, she did after many years,' he said," they reminisce.

As its first project, TFSC is working to preserve, raise awareness about and celebrate the music and culture of the Biate tribe. Next in the pipeline are the tribes of Bonda and Gond.

"We are currently in the process of gearing up to execute and document the second phase of the Biate story. With the help of collaborating musicians we hope to release fusion songs inspired by Biate songs and also share original Biate songs with the world. We are also working towards putting together performances where tribal musicians can come to the cities and perform with urban musicians," they add.

Thanks to its journey, Rest Of My Family is a social-work-through-art organisation. Hence, bringing different art forms

together for socially relevant work is quite central to everything that these folks do.

"So we are working on various formats to raise awareness about the Biate tribe, their history and their current social challenges through feature-length documentary film, photo stories and so on. To address their fading music, we felt it would be almost poetic to use state-of-the-art experimental music and visual art mediums to tell the story of ancient music forms that are disappearing," they explain.

Under TFSC, the duo is also working towards releasing tribal-electronic-fusion EP/albums while conducting performances in the cities where the tribal musicians perform and showcase their music in front of the country and world.

"A collaboration just seemed like the way to go forward. We need to come together to celebrate such musical diversity and what better way than bringing different artists and art forms together," they say.

Akshatha and Piyush also observed that the younger Biate generation was slowly losing interest in their cultural identity and music. So, they believe that such collaborative efforts will also generate interest in their hearts and minds by helping them see that everything that is old is not outdated and meaningless and should be celebrated.

2. Forest depts as nodal agency for community forest resources: A political blunder

The Chhattisgarh government issued an order on May 31, 2020 making the state forest department the nodal agency for Community Forest Resource Rights (CFRR) under the Scheduled Tribes and the Traditional Forest Dwellers Act, 2006. The move invoked discontent from several quarters. Alok Shukla, coordinator of Chhattisgarh Bachao Andolan (CBA), called the move 'illegal'. Article 11 of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) [FRA] Act, 2006, states that only agencies authorised by the ministry or the central government can be the nodal agency for CFFR.The reason behind it is clear: The forest department has been involved in activities that have brought injustice to the tribal and forest-dwelling communities of India and the department is a stakeholder in the process of settling forest rights.

Since the colonial times, the state forest department has committed numerous atrocities and injustice against these communities, which makes it a party for settling their rights. The recent order, too, betrays the FRA to its core. A similar order was passed by the Raman Singh government in 2017, under which alcohol sale was brought under strict state

government control, leading to the closing of makeshift stalls that sold country liquor, including mahua. The order was a violation of Panchayats (Extension to the Scheduled Areas) Act, 1996 [PESA Act] and the FRA. Both Acts validate the customary rights of tribal communities. In the fifth schedule areas of the state, restrictions could not be imposed on food and cultural-traditional practice of tribal communities under the excise laws applicable in the non schedule areas, according to the PESA Act.

Another example was seen in 2018. With an ambition of promoting mobile services in Chhattisgarh, Raman Singh government rolled back the untied 14th Finance Commission (FFC) funds allocated to panchayats so the "mobile companies could be paid for erecting mobile towers". A report by Alok Putul published on February 2, 2018, stated that Rs 6,100 million were taken back from the bank accounts of 9,810 panchayats. This was about 70 per cent of the total FFC grant.Within a week, however, the state government had to repeal the order — the FFC funds can be used for essential requirements of the village and only gram sabhas and panchayats have the right to take decisions on the utilisation of these funds. The Raman Singh government tried to establish mobile communication as an essential service, but failed. The present chief minister and the then state Congress president, Bhupesh Baghel, also criticised these two decisions. In both cases, Baghel attempted to protect the autonomy of Panchayats and traditional rights of adivasis. The May 31, 2020 order, however, proves that when

power comes to them, politicians don't hesitate to mend or break laws. It also proves that the state government has no intention to prioritise the initiatives towards settling community rights over forest and natural resources.

They only intend to prolong the process, so that the natural resources can be controlled by them. It is proven that the forest department has deep-seated colonial roots. With all 'good intentions', the department is still working towards establishing undisputed control over forests and its resources. Hence, it is observed that in the process of settling rights of forest dependent communities, the forest department is creating obstacles. After all, allowing the state forest department to be the nodal agency is not only against the law, but against the universal law of 'natural justice' as well. The government has to understand that the department itself is a party here, which needs to hand over the control of forest resources to forest dependent communities. It is the core objective of the FRA, 2006, which is backed by fact that protection of wildlife, biodiversity and forest conservation is only possible with the symbiotic relationship between forests and forest-dependent communities. A forest department is nothing more than an administrative unit under the law that is takes care of the forest in the absence of an able system. In theory, as soon FRA, 2006 came into existence, these rights were transferred to these communities. After its implementation, the rights of forest resources should be transferred to the Gram Sabhas.The move, hence, is not only a political blunder, but can also be seen as an attempt to recolonise resources. This step will end up raising questions

on the government's intention towards the well-being of people.

The state government did take initiatives towards settling forest rights claims. By raising support price of minor forest produce and making arrangements for forest dependent communities in the middle of the ensuing novel coronavirus disease (COVID-19) pandemic, Baghel has earned the reputation of a tribal-friendly CM. It will not be easy for the state government to repaint the picture tainted dull with historical injustice. On the basis of his three-decade long research, advocate Anil Garg found that several issues were resolved in undivided Madhya Pradesh, but which were not initiated for resolution in Chattisgarh. These include cases related to resources registered for the community's traditional rights, public and welfare purposes of the forest items in revenue villages, forest records and Khasra registers and patwari maps in the forest and non-forest items. There have also been cases related to reporting of protected forests or the matter relating to filing of deauthorisation of notified lands in section 34A. Apart from this, there has been no initiative on the offenses being done since 1996 in the name of orange land. Significantly, a special task force was formed in MP to address the pending cases. These issues have been investigated in detail, and have brought to light the gross administrative negligence of the state government. The Chhattisgarh government should also take similar initiatives in the direction of correcting historical mistakes for permanent resolution of these issues. The article was originally written in Hindi and was translated by Siddharth

Bhatt from SRUTI

3. No poll heat in Dediapada, eco-sensitive notification unknown to many tribals

The election campaign is conspicuous by its absence -- only two hoardings of the four BJP candidates contesting the Narmada District Panchayat elections serve as a reminder that an election is coming up on Sunday.

On a scorching afternoon, in the thick of ongoing local body poll campaigns, Dediapada town should have been witnessing the heat of the political activity.

But, instead, the main junction represents the picture of a world from another time. The election campaign is conspicuous by its absence — only two hoardings of the four BJP candidates contesting the Narmada District Panchayat elections serve as a reminder that an election is coming up on Sunday.

At a sugarcane juice stall, owned by UP-migrant Ram Singh Yadav, visitors display as much ignorance about the upcoming poll issues as Yadav himself.

"I have been living in Dediapada for 40 years and I am a voter. But here, we have only seen parties joining hands and working together. We only vote for the parties that our families have been traditionally voting for," he says.

After almost half an hour, the first election tempo of the Bhartiya Tribal Party (BTP) makes an appearance — on the loudspeaker is the promise of "protection of tribal rights, restoration of ownership on their land."

Several villages in the taluka have been included under the classification of 121 villages of Narmada district as eco-sensitive zones, as per the May 2016 notification of the Ministry of Environment, Forest and Climate Change (MoEFCC), which is being implemented since November last year.

The issue of the eco-sensitive zone had caused much uproar across the tribal belt of Narmada. It was after BJP Bharuch MP Mansukh Vasava's resignation from the BJP that the state government directed the district administration to withdraw

the ‘revenue records entry’ of the villages as ‘ESZ’. The notification, however, remains in place without the explicit mention of individual records.

Vasava had withdrawn his resignation after the government decided to erase the entries on the documents.

About five kilometres away from the town junction is the first settlement of villages — Navagam, Bogaj, Jawali and Koliwad — falling under the eco-sensitive zone. Sarpanch Mulji Vasava is a BJP candidate for the Dediapada taluka panchayat.

Mulji is busy campaigning in the neighbourhood villages — the topic of discussion is “Vikas (development) for job opportunities”. Examples of Kevadia turning into a tourist hub are cited and no one wants the implementation of the eco-sensitive zone. Mulji says, “The issue of the eco-sensitive zone is not worrisome anymore because all gram sabhas have passed a resolution against the implementation of the notification… On this matter, all three parties — BTP, Congress and BJP — have come together and assured the tribals that the government will not take away their lands. The area has basic amenities already, we have new schools built here. Bogaj village cluster has a literacy rate of 72% and Koliwad 63%. People want employment for a better future.”

Like Mulji, three other sarpanches of the neighbouring villages are also BJP candidates. Muljialso expressed hope that the BJP would win the seats of the Dediapada taluka panchayat this time — in 2015, the BJP lost power to BTP here. The JD(U) won 12 of the 22 seats while BJP won six and

Congress four. The JD(U) then led by Chhotu Vasava, broke away from the parent party to become BTP and was in alliance with Congress. Now, the BTP has tied up with All India Majlis-e-Ittehad-ul-Muslimeen (AIMIM) for the local body polls.

A senior elected representative of the Congress from the district says that the three parties did not want to create a political issue out of the eco-sensitive zone and decided to resolve it together.

In the villages, the local tribals do not know what eco-sensitive notification means. A group of young men from Bogaj village break into a laugh when asked about the notification. Khimji Vasava, a 25-year-old villager says, "We have been told that the government is trying to establish their right on our lands. But all the leaders have told us that they are fighting against it and in the local newsletters of the town, we read reports of how the leaders succeeded in pushing the government back. So, we have full faith in them and we know nothing wrong will happen."

The BTP, on the other hand, has been running its campaign on the tribal issues of land ownership. Ambalal Jadav, spokesperson of BTP, says, "The issue of the eco-sensitive zone is a grave one. It reflects the ideology of the BJP and the Congress of the disregard they have towards the existence of the tribals. The BTP was the one raising the issue of the land rights of tribals … We are trying to make them aware that the government has only removed the explicit mention of the

word 'eco-sensitive zone' from the revenue records, it does not change the status of the notification."

At the town junction, Rakesh Vasava, a 23-year-old graduate from the Industrial Training Insititute in the town, says, "We don't have too many employment opportunities here. There is a training institute but the placement has not been well paid. There are some who have got employment in the Dudhdhara dairy plant but most of the youth have to move to other cities. Even if they develop Dediapada like Kevadia, how many years would it be from now?"

4. Doctor couple does wonders for tribals at Sittilingi

Sittilingi is a remote village in Dharmapuri district, 125 km away from Salem town in Tamil Nadu, which used to be a god forsaken land caught under the spell of quacks and black magic. Noisy drums and fake injections were all they had to cure illnesses. This is when Dr. Regi and Dr. Lalitha took the plunge. This doctor couple went ahead to provide medical services to the tribals of Sittilingi, leaving their promising careers in the cities.

The couple found their calling in service to the underprivileged and wanted to use their knowledge where it was needed the most. Their hunt for the right place to offer their service ended at Sittilingi, a totally neglected and ignored tribal village. They ventured into the village, faced tough resistances and now they have emerged successful in establishing a full-fledged medical center for the tribals. A service beyond praises!

Regi and Lalitha called their service the Tribal Health Initiative (THI). Their perseverance and continued service has brought about dramatic change in the living conditions of the natives. Infant mortality rate in Sittilingi has reduced to 20/1000 and there are no mothers dying in childbirth for the past 5 years. The nutrition levels of children and the general well being of the people have improved to a great extent.

Another striking fact about the Sittilingi initiative is that the girls who serve as nurses at the medical center are personally trained by Regi and Lalitha. When Regi and Lalitha saw that it was extremely difficult to get nurses to work at this tribal village, they decided to go choose smart and trainable girls

from the village. This became such a wonderful uplift to the self esteem of the girls that they are extremely proud to be part of this initiative and to serve their community.

THI's approach to medical care went one step ahead in educating the people and 'helping the tribals help themselves'. They wanted to create a general understanding about health and health issues and make the natives acquainted with basic first aid. Today, over 21 neighbouring villages are benefiting from the Tribal Health Initiative that sprung at Sittilingi.

And, the couple didn't stop with medical facilities. They organize educational programmes, cultural activities and community development initiatives. There is a library facility that is available for children who also get to listen to motivating stories from a community worker every month. Truly commendable, right?

It is very heartening to know about the selfless and committed service of Regi and Lalitha and many others who are supporting them. You can visit them at Sittilingi and get to know their service better. We also encourage you to support the initiative by contributing to the cause.

5. Transforming Tribal Kids In 60 Days

Life in the tribal belt of Rajasthan's Udaipur district is very rough. Shrinking forests and pasture lands, on the one hand, and small, unproductive farm holdings, on the other, are squeezing life out of many a home, with the adult occupants forced to bundle up their few belongings and migrate in search of a livelihood. The grain – maize or wheat, sometimes both – tribal families scratch out from their rain-fed plots typically last for five months in the year. For the rest of the time, the community is dependent on small income from minor forest produce and through rearing goats. But with the forests under stress, this support base, too, is getting eroded. It's the children, badly off in the best of times, who are paying the highest price for the disruption and destitution.

Imagine the life of a seven-year-old tribal Bhil or Garasiya child in Jhadol or Kotra block with some help from Narendra Pal Dhamor, a teacher from Kherwara and a long time observer of people living in the undulating stretches of rural Udaipur, “Technically, families here may not be landless, but the couple of bighas (one bigha is about 0.4 hectares) they own is insufficient to keep body and soul together. So people migrate and children often get left behind to the indifferent care of some member of the larger family or older siblings. They should be in school, but have either not been enrolled or have dropped out. As for food, they may be given a maize roti or two in the morning and then left largely to their own devices. So they roam around, graze cattle, play in the dust, fall sick, and over time grow into malnourished adults. Such is the cycle of existence in these parts.”

It is against this backdrop that the Dr Mohan Sinha Mehta Training Centre, run by the Udaipur-based organisation Seva Mandir, in Kaya village, has been working to suggest another future for these young lives. Situated on an 80-bigha campus some 25 kilometres from the picturesque lake city, the centre has for over a decade run three annual residential camps of around 60 days each – from January to March; May to June, and November to December – for about 180 to 200 children at a time, most of who come from impoverished tribal backgrounds.

Explains Angela Jacob of Seva Mandir, who supervises the Kaya programme, “A majority of kids here have either not attended school or have dropped out. Once a child completes three camps of 60 days at the Kaya centre, she or he will be

able to do some basic reading, writing and counting in Hindi. We then try and place them in regular school.”

The first thing that strikes you about the Kaya centre is its airy, sun-lit classrooms alive with the voices of children. They double up as dormitories at night, as indicated by the neatly folded mattresses and blankets piled up in one corner. The children, mostly in the 6-14 year age group, have been divided into three categories: Kids with no experience of education are placed in the ‘C’ category; those with a basic understanding of letters and numbers make up the ‘B’ category, while those with higher skills comprise category ‘A’ – or graduate to that level during their days at the camp.

Within a month of camp life, most of them will be able to read from their worksheets and write on the blackboard with felicity. Not vowels or consonants but words signifying familiar objects – “matka” (pot), “nal” (tap), “aam” (mango), or the ubiquitous “billi” (cat) – are the basic building blocks of their learning. A lot of information is conveyed through stories and play acting, all of which is closely supervised by trained teachers adept at using learning material like flashcards conceptualised by educational organisations like the Madhya Pradesh-based Eklavya or developed at the Kaya centre itself.

A close relationship between the teacher and the taught – at a ratio of roughly one teacher for ten students – is what makes the teaching pay dividends. Says Manju Parmar, a teacher, “We don’t beat kids. We try and explain things, even if it takes more time. The children don’t live in fear and, unlike in

a government school with its standard format that is followed blindly, we try to make learning fun. For instance, counting is taught using local material like stones or sticks.” Between 5 to 6 pm, games are played in the courtyard; there could also be cultural activities like music and dance. Dinner is served around 8 and it’s ‘lights out’ by 9.30 pm.

But learning, while important, is only half the story. What is striking about this intervention is its emphasis on nutritious meals and sanitation. It is this two-pronged approach of healthy eating and effective learning that brings about a metamorphosis in the kids.

When they arrive many children bear the marks of malnutrition, even starvation – bloated bellies, dry, reddish hair, stunted growth. They don’t know how to use a toilet or even wash their hands properly. Says Dalpath Singh Parmar, a supervisor at the Kaya centre: “It’s sad, but when they first come in they find it difficult to digest even our simple fare. Since most of them have almost been starving, regular food initially upsets their system and it takes a while for the normal appetite of childhood to assert itself. Once that happens, the kids look forward to the meals, after washing their hands and waiting patiently for their turn to be served.”

Breakfast could be ‘poha’ (a dish of beaten rice), sprouted ‘moong’ (lentil) or ‘dalia’ – a porridge made of semolina, either sweetened or salted. Lunch consists of freshly made ‘dal’, vegetables, rice and ‘rotis’. A similar fare is served for dinner. Fruit is often made available depending on the season. The children love bananas and mangoes. Every

summer, the fruit-laden old mango trees in the Kaya centre campus never fails to thrill them.

While most of the food served is traditional Rajasthani fare, an interesting innovation is a soya unit run at the campus, which provides the children with soya milk once in two days. Laxman Singh, who operates it, is also adept at making tofu by splitting the milk and passing it through a cloth sieve. But protein rich tofu is not a favourite – and needs to be disguised by being mixed with dal or vegetables. Angela Jacob smiles, "In fact, these children, like children everywhere, resist food they are not familiar with, like 'rajma' or 'chole' (legumes). 'Palak' (spinach) too is disliked. What they do enjoy is the special Sunday meal when the favourite Rajasthani dish, 'dal baati', makes an appearance, or mithi lapsi – a sweet porridge made out of broken wheat."

Airy, sun-lit classrooms serve as a good backdrop to learning

The Kaya centre demonstrates how children, who fall between the cracks of a ruthless rural order, can be given back their childhood. Educational camps cannot, of course, replace

a proper school, but as M.S. Agwani, former vice-chancellor, Jawaharlal Nehru University, now based in Udaipur, observes, “An intervention like this can prove valuable when government schools don’t run well or when parents don’t see any value in sending children to them.”

Ravinder Kaur, Professor, Department of Humanities and Social Sciences, IIT Delhi, who has personally visited the centre puts it this way, “For children who exist outside the school system, a few months of regular care, in the company of other children like themselves, do amazing things. What struck me when I was there was the enthusiasm they displayed, their sheer peppiness. Their imagination had been given free play, they were encouraged to express themselves. They also have the energy to participate in all activities because they got good food. That, after all, is the central concern, isn’t it?”

6. Bengal’s Tribal Women Lead Change, Ensure Food-Security and Fight Social Ills

Tribal women of Purulia district in West Bengal have learnt, with the help of several NGOs and SHGs, to implement efficient water management techniques and multi-crop approach and achieved food-sufficiency in a region that was on the 'drought-hit' list in spite of heavy rainfalls. They are now tackling social ills in their villages!

It was ironical that Purulia district often found itself on the West Bengal government's 'drought-hit' list when the average rainfall here is 1100mm-1500mm. The failure to conserve water as well as poor agricultural practices meant that despite back-breaking labour in the fields, farmers could only achieve six months' food sufficiency.

Today, however, all that is changing thanks to a water management revolution led by ordinary village women, a

majority of them tribals. “The magic has been worked through our Self Help Group’s (SHGs) water management programme,” says Sadmoni Hembram, 39, of Tilaboni village, who proudly informs that she has a multi-crop land that yields two vegetable and one paddy crop in a year these days.

In an area where development has been stunted due to a weak government machinery and increasing Maoist influence, SHGs like Sadmoni’s ‘Petre Madwa’ have spearheaded developmental initiatives like the Integrated Natural Resource Management (INRM) under the government’s Swarna Jayanti Gram Swarojgar Yojna (SGSY). Of course, this has been achieved with guidance from Pradan, an NGO working on creating sustainable livelihood in the region.

Explains Kuntalika Kumbhakar, Integrator (state unit), Pradan:

Purulia that falls in the Agro-Economical Zone 7 gets adequate rainfall, yet most of the water just flows away, particularly in the hilly areas. Therefore, we train the SHG women to conserve water, increase water harvesting and water table levels, check soil erosion and offer a combination of crops best suited to the category of land and available water resources to improve livelihood

As per Sadmoni, in order to improve access to water for irrigation in her village, they have “made ‘hapas’, or small water tanks, where rain water is collected.” These ‘hapas’ have a technical design, wherein the lowest point of the field is excavated in steps and the rain water flows into the tank.

"The size of these tanks varies from 30ftx30ft to 100ftx100ft depending on the area that needs to be irrigated," she says. Once the water is collected, the next step is to ensure that a minimum amount is used to irrigate the maximum area.

Better water management has led to a remodelling of local agricultural practices with farmers now cultivating short-term crops. The land in Purulia falls into four categories and the tribal population categorises them as: 'byde' or upland, 'kanali', which refers to surface-level medium upland as well as medium lowland, and 'bohal' or low-lying land. Says Sadmoni:

The land holdings among the families of women in the 184 SHGs in Burrabazar block fall under the medium upland category. Today, we first plant a pre-monsoon cash crop like vegetables or creepers such as cucumber or gourds, which use the north-western showers. Later, a short-term paddy crop that is sufficient for our use is sown. This is followed by another vegetable cash crop. There is sufficient water because along with the monsoons, we use the 'hapas' water. In extreme dry seasons, we plant mustard for a short term. Almost all farmers now have at least double or three crops.

To celebrate this agricultural turnaround and to compare notes and share strategies on varied concerns in the region, recently around 5,000 women belonging to 350 SHGs, organised under two federations, 'Jhalda Nari Shakti Mahila Sangh' and 'Sabuj Sathi Nari Shakti Sangh', came together for a 'mahaadhiveshan', or mass meeting, held in the Barrabazar and Jhalda blocks of Purulia, respectively. All these women

are true change-makers and have shown that by simply ensuring better outcomes from traditional livelihoods like agriculture, achieved through practices like watershed land and water management measures, micro-credit financing, and horticulture, poor village households, too, can lead a life of dignity.

Like Sadmoni, Sarathi Kumar Bala, 30, who was present at the 'mahaadhiveshan', is a happy woman today. In addition to water conservation, she, and other tribal women of the Narayani Mahila Samity in Berada village, has understood the importance of safe drinking water and hygiene. Here, the Water for All intervention, which focuses on safe drinking water and sanitation and on bringing about a change in the attitude of the villager, has made the difference. Effecting change, Sarathi's group has been conducting house visits to convince villagers to keep their surroundings clean, wash hands regularly and not to defecate in the open. "We also make them aware of the Rs 3,200 government subsidy to build latrines if they contribute Rs 300 themselves," she says.

As Sarathi's village group successfully put into practice the Water For All strategy, their tribal sisters in Mohuldi hamlet, which falls under Jhalda I Block, were not far behind. In an area characterised by water scarcity, the Radha Rani SHG, led by Balika Mahato, has pioneered an initiative to provide piped drinking water. "We not only constructed several water harvesting structures for irrigation, but have set up a pipe distribution channel across the village to ensure that water from deep tube wells used for drinking is not wasted," says Balika, 38.

Even in the hilly terrain of Bagmundi and Ayodhya blocks, tribal women from 65 SHGs now know how to hold on to the rain water that previously used to simply flow away. They have devised low-cost methods like building earthen dams and using the gravitational flow mechanism to carry the water to the site through channels. "The cost is minimal and the women are reaping the benefits in the form of increased agricultural yield," points out Kuntalika.

In Gokurnagar village, for instance, 8-10 bighas of non-fertile land today is yielding paddy, potato and mustard crops through the year because of the efforts of the Bidhuchandan Mahila Samity, a group of 14 tribal women. "We first built mud banks around the land to prevent soil erosion and allowed the rain water to stagnate for a year. Then we spread cow dung fertiliser to make the soil fertile and dug several 'hapas'. After the fertiliser dried up, we did a soil test and then planted our first paddy crop. For the last two years, we are also harvesting potato and mustard on the same land," beams Mangali Mandi, 28, the treasurer of the group.

With a flourishing livelihood prototype in place, the Purulia women are now training their energies on tackling the social problems plaguing them. Partnering this process is Delhi-based women's resource group, Jagori, under a special gender empowerment project initiated in 2011 and supported by the UN Women's Fund for Gender Equality. Says Mangali:

During the 'mahaadhiveshan' we discussed issues like child marriage and dowry. In Purulia, there are over 40 per cent child marriages and dowry, though non-existent amongst

tribals, is a problem for the OBCs. We have also found that female selective abortions are on the rise. Today, we have the strength and solidarity to oppose these social evils and that is our next course of action.

Incidentally, things are already starting to look up. Take Gokurnagar village. Where earlier the women were not allowed to venture out of homes, often prevented from attending SHG meetings and forced to migrate with the family during the harvest season, they now enjoy an equal status in decision making. Of course, it helps that their economic status has improved considerably.

In fact, this is the story across Burrabazar block where the 184 SHGs have a total fund value of one crore ninety lakh rupees, of which they disbursed one crore thirty-five lakh rupees in loans in the last financial year. Such has been the impact of this socio-economic empowerment that Sadmoni says, "Aajkal dada bagale gecche, amra meeting esche (These days men take the cattle for grazing while we attend a meeting)!"

Purulia's SHG movement is a development initiative without a political umbrella and it has given recognition and dignity to women, who earlier had no significance, presence or voice.

7. Purushwadi – Living the Tribal Life

Gangadharan Menon visits Purushwadi, a tribal village in Maharashtra, and discovers its many paradoxes while celebrating Holi with them. Experience with him the joys of living a tribal village life, largely untouched by external

influences, but where sadly things are changing as well, in a place governed by a female deity and yet called "Purush"wadi!

The presiding deity of this tribal village is a goddess called Zakubai. A goddess so powerful that she took it upon herself to protect this village and the nearby four villages, without any help from any of the male gods. She even went to the extent of decreeing that the idols of Hanuman be removed from these five villages. To this day, these five banished idols are kept on the banks of a river, near a village called Khadki, all with their faces down. If anyone ever attempts to make these idols stand upright, by the next day morning, the idols are found lying flat on their faces again!

Though the village is matriarchal, and is ruled by a tribal goddess, paradoxically it is called Purushwadi. It is said that earlier it was called Pur-unch-wadi, which means the village on top of the mountains. With the gradual onslaught of a male-dominated society, it was conveniently changed to Purushwadi!

This tribal village is about 180 kms from Mumbai, beyond Igatpuri, situated in Ahmednagar district. It's one of the villages adopted by Grassroutes, an organization that has been promoting village tourism in this tribal belt for over 4 years.

Village Hutments - basic but clean

Today, Purushwadi is a picturesque village of 109 houses in which a tribal community called Mahadeo Kolis lives in perfect harmony with nature. Here again, there is a living paradox. In the very name of the tribe protected by a goddess, a mainstream god has crept in: Mahadeo or Lord Shiva. The fact that these tribals now trek to the Bhairavnath temple situated about 20 kms from here for blessings, points to the influence of a mainstream religion on tribal beliefs.

In 2006, only a handful of households joined the Village Tourism Committee. Today over 60 households welcome guests to stay with them and experience what it is to live in a village. To make sure that the guests don't experience a culture shock, the housekeepers, the cooks and the guides have been extensively trained.

So the guests, whether they stay in the tents pitched in the wheat fields on the outskirts of the village, or in the houses in the village itself, can expect the basics: clean toilets, clean towels, safe water to drink, hot water to bathe, clean mattresses and bedsheets, and even a green salad along with the otherwise authentic, rustic food!

Our host was a lady called Jijabai, whose husband Punaji was the clerk of the Panchayat. All our meals were cooked and served in this matriarch's house, including the morning tea. I thought the disarming, perpetual smile on her face was because we were her special guests. But as I stepped out of her house into the village, at every corner I saw the same smile on a hundred other faces. And I realized that Mahadeo Kolis are an extremely friendly and warm people. We walked through the narrow lanes of the village as if it was our own village. And the best part was they continued their regular activities, unmindful of our presence: whether they were filling water in their pots, or cutting wood, or harvesting in the wheat fields, or milking their cattle. It was a real slice of life, and not a show that was specially put up for us. Much like the Masais of Kenya who had got used to guests coming into their villages; and who lived out their life in the open, in front of a hundred inquisitive eyes.

It was at the village square that I meant Datta, an authority on the local flora and fauna. Apart from telling us about the various plants and trees endemic to the area, he also told us about the local varieties of wheat and paddy. And how the import of hybrid seeds into the village had already resulted in three of the endemic rice varieties becoming extinct. Despite the advent of mainstream agriculture, some local species survived. And whenever someone in the village falls ill, they ensure that only those local species of rice is cooked and served to the patient, till he or she is fully recovered!

Snapshots of Purushwadi

Datta also told us about the adverse impact of the scheme of afforestation. As part of this scheme, the tribals were asked to plant innumerable saplings on a barren hillock. The intentions were noble; but the saplings sadly were of eucalyptus, acacia and jatropa. All of which, when they spread from the hillocks into the unsuspecting farmlands, can create havoc with the local plant species, as they guzzle water and deplete the moisture in the soil, and even the ground water. A paradox that works against the laudable and extremely successful attempts at water conservation in this village by the world-renowned watershed management organization called WOTR. By digging trenches at various levels on all the adjoining mountains, this organization has managed to slow down the flowing rain water, so that the top soil is retained and more water is absorbed into the soil, thereby improving the ground water resources. The motto is simple: 'If the water is running, make it jog; if the water is jogging, make it walk; if the water is walking; make it stop!'

Another interesting character we met was Atmaram, the local expert in honey collection. He is actually a shepherd who goes into the nearby jungles to graze his goats. And as they

lazily graze on the grasslands, he follows the busybees to their honeycombs. Village folklore has it that once a tiger attacked his favourite goat, and he grappled with the predator till he secured his goat's release.

Next up was our trek to the highest point in the region. And on our way to the top, we came across many sacred stones marked in saffron. Made of all shapes and sizes, they were the original idols of the adivasis. An insight into their beliefs was provided by our adivasi guide. When we asked him where the nearest village was, he answered, 'There, right in the belly of that mountain.' Showing that, for an adivasi, a stone is a living thing!

Sun setting on the fields

As the sun slowly started dipping behind the Western Ghats, the vast landscape of dried up grass on the hilltop became a gorgeous tapestry woven with endless golden threads. And when we started our descent, our weary path was lit up by the rising full moon, as it was the night of Holi.

In Purushwadi, everything begins at Zakubai's temple. So did the Holi celebrations. The pyre of dried twigs and small

branches was waiting in all readiness. After the temple lamp was lit, young girls lit up their own diyas from the flame of the lamp, and these were then used to light up the Holi pyre. Soon, aided by a strong breeze, gigantic tongues of fire leapt into the sky, as if to rival the rising moon.

The next day morning, we climbed down the mountain slopes lined with mango trees in full bloom, to reach the blue river. For a river of its ethereal beauty, it had a phonetically ungainly name: Kurkundi. A dip and a swim in the chilled blue waters did wonders to rejuvenate us and we walked briskly to the village for our breakfast. We had deliberately worn old clothes in anticipation of a colourful Holi ahead. But when we reached the village, there were no pichkaris, no colour-filled balloons, no bucketsful of vibgyor colours.

That's when it dawned on my urban mind that Rang 'Panchami' is actually meant to be celebrated on the 5th day after the full moon. It's the domination of the North Indian culture, perpetrated through Bollywood, that irrevocably changed it to the 2nd day!

Untouched by this, the tribals here were getting ready for five days of festivities packed with various rustic competitions. The first one was to lift one of the three perfectly round boulders that were kept at the village square. And the boulders weighed 25 kgs, 50 kgs, and one well over a 100 kgs! This was followed by Kabaddi matches, wrestling bouts, and you guessed it right, the mainstream sport: cricket!

As we bid farewell to Jijabai and her family, I really wished this tribe retains its rustic innocence, and its very special

beliefs and rituals. But the recently-constructed iron bridge that stretches across the river, connecting this tribal village to the mainland, is a grim reminder that mainstream thought will come in by that road, by the hour and by the day, and smother the special flavours that have evolved here over many, many centuries. Eventually resulting in the vanillisation of culture, where one flavour suits all.

8.The Hornbill Festival – A Visual Treat

The Hornbill Festival, held in the first week of December every year, is a marvelous riot of colour that shows off the rich fare of diverse cultures and traditional arts that is Nagaland. Here you can witness the attires, folk music and dance forms, headgears, cuisines, paintings, handicrafts, and

other intricacies of the varied tribes and sub-tribes of the state, as Meena Vaidyanathan did. Here we invite you to take a look at the festival just gone by through her words and lens, while hoping you can make it there yourself this year!

The beauty about diversity in the world we live in is that at the heart of our social fabric, culture shapes our identities, aspirations and relations to others. And the myriad of cultures make the experience of living that much more colourful and vibrant.
The differences in cultures, both subtle and otherwise, shapes places and landscapes that we live in, and give our unique lifestyles their form. Heritage, visual and performing arts, cinema, music, publishing, fashion or design all have a place that bring to life this cultural panacea.
The Hornbill festival that has been showcasing the cultural canvas of Nagaland and North-east India for the last 12 years just reinforces just how brilliantly cultural and creative sector can impact social and economic development while introducing this beautiful part of the world and its people to those who come seeking to know better.
Celebrated in the first week of December, the festival features traditional arts, dances, folk songs, and games conducted amidst near perfect replicas of tribal hutments to the loud applause of an ever-growing enthusiastic audience. Every year, a new theme, game or contest is added to give the festival a new flavour urging even those who have experienced the festival before to be hungry for more.
This is was my first participation at the Hornbill, but I definitely have to go back for more. After all, I learnt there are

nearly 1400 villages in Nagaland, each having a unique tradition, dance form and attire, and given that only a few get invited to perform every year, the opportunity to see the dances and other cultural events that one witnessed this year might come after a 100 years.
Besides, the beautiful lovely people, near-perfect management of the teeming crowds, clean utilities, exotic food and cold rice beer or Zutho to wash it down is a heady enough combination that will draw me back to Kisama village where the hub of activities during the Hornbill festival is.

If the mornings were rife with splashes of colour, exciting head gear and energetic dances, sundown brought the city of Kohima alive with the night bazaar, carnival and the fabulous rock shows.

The city of Kohima as is true with many other parts of India has severe power shortage and we got to experience the gravity of the situation first-hand. But the obvious lack of infrastructural support did not dampen either the spirit of the people or enthusiasm among the visitors. During the day, the drive down the Naga slopes in winter is a treat to the eyes. Wild poinsettias in full bloom make the entire area dressy and festive as if nature is celebrating the Christmas spirit as well.

The Naga food has not been influenced much by other cuisines in the region. Hunting being the favorite occupation of the people, meat is an indispensable part of the Naga cuisine, but I was pleasantly surprised at the festival that the vegetarian in me was as excited as my non-vegetarian son. Apart from the expected pork and beef specialities, bamboo

shoot, lettuce wrapped sticky rice balls and yam leaves made for some fabulous vegetarian options.
The Naga king chilli, for which the Government of Nagaland has obtained GI rights, is widely used to add flavor and spiciness to the dishes, and consequently, most of the dishes were rather hot! It wasn't difficult however to balance the spicy food with farm fresh fruits, especially pineapples and kiwis and yummy rice cake. I also relished the sweetness of the sticky rice tea which reminded my much of the Kerala red rice Kanji in its flavour and delicate smell.
The food and the local games (piglet catching, greased bamboo pole climbing, Naga chili eating and archery to name a few) kept my otherwise restless little boy so totally engaged that when it was time to leave, he literally had to be coaxed with the promise that we will be back soon!
The make shift art gallery, where in addition to some outstanding works of art by local artists, we also got to hear interesting voices, was a delight. The highlight was Javed Akhtar's talk, brief but interesting, where he talked about how art can be the harbinger of progress. The Second World War museum that Kisama houses is by far the best chronicled war museum I have seen in India.

I would urge Hornbill festival enthusiasts to find local friends to host them around the villages between Kisama and Kohima rather than stay in the Kohima hotels. The experience just increases multi-fold when one lives and stays with the beauty and warmth of a hospitable group of people!

To me, the Hornbill festival was a lot more than just an

annual affair of mass get together. To me it was a window to get to know an experience a beautiful part of the world, rich in tradition with its unique identity and cultural legacy. It's a beautiful way to bring awareness about preserving the bio-diversity in the region along with its heritage while providing opportunities to the local economy to flourish.

The few days spent at the Hornbill makes me yearn to know more. It reminded me of how much there is to learn and experience. As I drove along the Dhansiri river on my way to Dimapur to return home, I held on to the samples of locally weaved cloth, the pictures of local birds, the masks and the bamboo utensils we bought. They will keep the memories of a beautiful land that has so much to offer alive until I find the opportunity to be back.

9. From Building Bridges To Building Blood Banks, This Man Has Done It All!

Since his childhood, Saunak's school art teacher fascinated not only him but the whole school. He was a multi-talented person. However, when Saunak met him years after he left school, he learnt other facets of his life. Instead of the canvas, he was sketching beautiful villages and better lives for the Santhals. Here is the story of his beloved and respected Art sir – Mr. Debabrata Ghosh.

The Santhal is the largest tribal community (adivasi, adi = old; vasi = inhabitants) in India. West Bengal is the second largest (38% of the total Santal population) home to these indigenous set of people. Be it the 1855 'Santhal Uprising', or Pandit Raghunath Murmu's Ol Chiki script in 1925 or pre-independence Santhali agricultural techniques or their unique

music, this tribe has contributed to India's history and culture in a number of ways. However, in the era of globalization – the Santhals have found themselves increasingly outcast from the core society. Here is Debabrata Ghosh, a good samaritan working with these tribal people for the last 25 years and making the change happen in their lives.

Mr. Ghosh, an ex-teacher by profession has many facets as he is an artist, journalist and a sportsman. A resident of the industrial town Asansol in West Bengal, in 1988 he went to look after his ancestral land at Bonogram nearby to the group of Santhal villages of Dihika, Jorpara & Haramdihi. These villages are 8 kms away from Asansol on the banks of Damodar river. Mr. Ghosh could not stay away from the land because of the heart-melting void of basic facilities like education, health, hygiene, etc. Above all, the love of the people and warmth of the soil gave him an inner calling to become one of the Santhals. This alumnus of Narendrapur Ramakrishna Mission School started walking in the path laid by Shri Ramakrishna.

Coming back to 2014, Mr. Ghosh is working with the larger chunk of Dihika block comprising of 8 to 9 villages and thousands of its inhabitants. I was struck by the depth and practicality of his work and vision. These tribal families are away from the mainstream development owing to lack of government machinery and the usual suspicion towards the new and the unknown by the Santhals. As a forward thinker and learner of society, he was quick to address the bridge between the urban people and these tribal. Witnessing the Naxalite-Maoist revolution – he understood that the only way

to keep away those elements is to improve their livelihood and give them a better environment to live in.

Thus started the journey of 'Damodar Adibasi Development Society', with the sole objective of social and cultural evolution, and disbanding the easy path of revolution. Once, the curtains of suspicion rolled over, the Santhals treated Mr. Ghosh as one among them. Mr. Ghosh recalls that his first project with these poor tribal people was to address the infrastructure issues. By 1990, he himself, along with the immense tribal labour power, constructed a bridge. The bridge shortened the journey to reach the nearby Damodar station and the bus route to the towns of Burnpur and Asansol.

Next, being an artist – he truly understood and patronized the rural forms of art & craft of the villagers. He taught them the modern techniques of painting and usage of colour. Also, to create rural women empowerment he started teaching craft work using jute. After decades of hard work, hundreds of young girls are preparing carpets, jute bag and masks. The scale is yet to be reached – but the products are creating a huge demand in the neighboring states and with city people. Mr. Ghosh is now mulling on new go-to-market plans for these products.

Back in the 90's illiteracy was at its peak. Mr. Ghosh took time out from his teaching profession for counselling the Santhals and showcasing the usefulness of education. Next, he started mentoring a few educated youths and started running tuition centers in the villages. Now each year, before the Santal girls

are married off they have studies at least up to the 10th or 12th grade. Few are showing even higher ambitions, like Boni Hembram who dreams to be the first graduate of the entire block. She is looking for financial assistance to pursue the graduation stream of her choice in the renowned Vishwa Bharati University in Shantiniketan.

To encourage and ease the journey to school – each year Mr. Ghosh and a handful of his friends have gifted cycle to these girls. Owing to the rising literacy, for the last few years Mr. Ghosh has encouraged them to start Santhali Little Magazine. This is helping to revive the rich Santali language, which is also being encouraged through translation work and some book publications.

To grow culturally, the Santhals have formed formal groups of Folk Play (locally 'Jatra') and performed in the nearby districts. Riding on the popularity of the Santhali dance, Mr. Ghosh had offered platforms to perform in the cultural hubs like Rabindra Bhavan or at famous book fairs. These villagers are slowly witnessing the enthusiasm and mingling with city people. Further, these cultural troops are not only participating in but also winning sub-divisional level cultural competitions.

After trying his persuasion skills for the last two decades, Mr. Ghosh succeeded in gaining clothing independence for the women. Now, young girls do wear clothes other than Sari in the village and while travelling. Also, to discard social taboos, villagers are going out on picnics and touring nearby places. Further, he is training a couple of girls to drive a car. Mr.

Ghosh wishes to widen their horizons through these initiatives.

Football being the favourite sport of Bengal, Mr. Ghosh used it as a means of exchange and communication. The village team coached by him recently won the Madhukonda Shield tournament. Now, annual sports day is a regular affair for the inhabitants of Dihika block. To preserve nature, Mr. Ghosh has started tree planation with the kids. This is making them and their parent's eco-sensitive in their day to day lives.

When I expressed my curiosity on the work in the health front, Mr. Ghosh shared a story. Twenty years ago, the Santhals were against blood donation. As an outsider back then, he could not just merely counsel them and expect them to change their views. He found high infant mortality because of a shortage of blood. So he suggested only grouping of blood, so that blood could be arranged from the district hospital. Next, after the grouping of blood groups, when the villagers found shortage of blood in the hospital – someone among the Santals came forward to donate blood. Mr. Ghosh smiled from a distance, as it saved life and served the purpose.

Now, till date dozens of blood camps have been held and hundreds of villagers, irrespective of gender, have taken part. To take care of emergency situations – Mr. Ghosh has gifted the villagers an ambulance. He also conducted counselling classes along with the local police so that the alcoholics could get rehabilitated.

In the above picture, using only village resources – starting from raw materials to civil technique to artisans – Mr. Ghosh and his Santhal family is constructing a hall. This would be used in the coming days as a workshop and community center. The center is coming up in the spirit of the Santhalis. This center would be used as a marketplace for their craft work, host tuition classes, awareness sessions and be used for other projects. Last but not the least, in a state where chit funds do rampant business – Mr. Ghosh's financial literacy classes and awareness programs have kept these greedy fund owners at bay.

All these 26 years, Mr. Ghosh has funded and tried to make most of the projects self-sustaining through his individual mammoth effort. This karma-yogi finds guidance in the words of Swami Vivekananda. Mr. Ghosh has treated the Santals in the light of his master – '*Daridra Deva Bhavo*' (seeing God in all while serving). This one man's effort not only created a physical bridge in the past, but a stronger connection between two cultures of our nation – bringing down social and superstitious boundaries.

10. Coal mining and India's tribal peoples: Inequality as the death knell of community

Mining and land dispossession produce new, profound inequalities within Adivasi communities, which erode their traditional egalitarian values

The Adivasi village of Karampot, in Jharkhand, among India's most prominent coal-bearing regions, consists mostly of mud and some basic brick houses. Scattered alongside them, however, is a smaller number of much more conspicuous structures: Sizable, brightly coloured, gated concrete houses, most often with a large motorbike parking in the courtyard.

Only about a decade ago, such stark disparities in living conditions were not part of the landscape. It is all due to coal mining.

In recent years, the impact of coal and other mining projects on India's Adivasi communities who inhabit much of the country's resource-rich tracts has drawn significant public attention.

The problem is not only these projects' environmental footprint. Critics point out how mining brings about large-scale land dispossession for Adivasis and leads to the pauperisation and destruction of their communities, which are traditionally reliant on access to land and forests.

But there is another, more hidden effect of mining that could spell the death knell of tribal society: New, profound forms of inequality in these communities, which fracture their very social fabric.

The case of Karampot

This was what I discovered in Karampot and the area, where I lived and did fieldwork for 18 months between 2015 and 2017. Compared to the rest of Indian society, marked by pervasive social hierarchies along the lines of caste and class, Adivasi communities are considerably more egalitarian in their structure and values.

This is reflected, notably, in low-economic differences between households, and an age-old practice of mutual labour exchange, for example, to construct and repair their mud houses. I can ask my neighbour to help me seal my house's tiled roof before the rainy season, and I'll help him seal his in return.

All this existed in Karampot as well, but has been steadily disintegrating since mining and dispossession entered the scene some 15 years ago. Here lies the nub of the matter: Rather than uniform impoverishment, as is often assumed, mining and dispossession have led to the emergence of social differentiation within the community, producing salient internal disparities.

Paradoxically, the culprit is a relatively generous compensation policy for land that is dispossessed for state-run mining projects. In 2008, one such project located not far from Karampot announced that as part of an expansion plan, it would be taking over the entire territory of a neighbouring Adivasi hamlet to make room for a new opencast pit.

For their loss of land, and after a lengthy process of negotiation with the project by local Adivasi political leaders, most of that hamlet's residents were able to receive jobs in the colliery as assistants, as part of the existing but often poorly implemented compensation policy for dispossession.

For many of these Adivasis, especially from the younger generation, relinquishing in exchange for a compensatory job wasn't in fact a bad deal. Like most Adivasis in rural India, they had been struggling to get by through subsistence agriculture, faced with demographic pressure and casual wage labour.

The possibility of a permanent, salaried job — a scarce, sought-after commodity in India's precarious labour environment especially for marginalized populations such as Adivasis — was certainly attractive.

The jobs that were meted out to Adivasis near Karampot can be seen as a success, or at least a relative one. Indeed, compared to the multiple reported cases where compensation for dispossession by mining was nowhere near adequate, the attainment of jobs around Karampot — following pressure and mediation by local leaders — was a much more favourable outcome.

But it also had ruinous side effects, as it produced novel, striking inequalities within local Adivasi society. Having had to leave their old hamlet, taken over by the mine, some of the newly employed Adivasis have moved to neighbouring Karampot, where they built large cement houses and now make up a privileged minority with secure, gainful work.

The rest of Karampot's inhabitants, on the other hand, live a veritably precarious existence. While they still hold on to their modest farming plots, mining has affected them as well: From the blasting that cracks their mud house walls to the ubiquitous coal dust that pollutes the air and soil and to the expropriation of common grazing and forest areas around the village.

However, because they have not — as of yet — lost own land to the mine, they are ineligible for any kind of compensatory employment. Instead, they have taken to peddling coal on bicycles, gathered illicitly from the colliery's depot yard, as a way to survive.

While for those who gained it, compensatory employment has allowed pursuing upward mobility aspirations — increasingly common among younger Adivasi generations —

their coal-peddling Adivasi counterparts feel excluded and left behind.

In addition to their concrete dwellings, employed local Adivasis usually own a motorcycle; throw relatively expensive wedding celebrations; and send their children to private schools outside the village.

Non-employed locals, by contrast, usually inhabit earthen houses; travel by bicycle or on foot; hold simple, unpretentious village weddings; and send their children to the local, rudimentary government school. Employed, better-off Adivasis have been progressively diverging away from poorer community members engaged in precarious, informal labour.

Differentiation has emerged not only between households but also within them. Rajkumar and his nuclear family, for example, live on the same compound as his two younger, non-employed siblings and theirs.

As the older one, Rajkumar took on the compensatory job for the household's plot of land. As the employed brother, Rajkumar purchases rice grains and other basic foodstuffs for the entire household; nonetheless, disparities within the household are impossible to miss.

Rajkumar and his siblings, for example, live under two very different roofs. Abutting the same open courtyard, his brothers occupy a mud dwelling, while he, his wife and their baby boy live in a newly built cement house with a large television and speaker system.

Unlike land, which is a joint household resource, a job is an individual asset, and employees' salaries are ultimately intended for their and their own nuclear families' needs and wishes.

Compensatory jobs for mining-induced dispossession have then resulted in Karampot in the emergence of marked social differentiation, between the group of employed Adivasis and all the rest.

Diminishing solidarity

While disparities between households in the community did exist before the onset of mining, they were minimal and transitory, which was very different from the inequalities of caste society in the Indian plains. Now, compensatory employment was leading to intra-community inequality of an unprecedented order.

Many villagers I spoke to, especially from the older generation, lamented that this has destroyed community solidarity. Displays of new relative wealth by recently employed Adivasis enhance the sense of marginalisation and have triggered resentment among worse-off villagers, who feel lagging behind in terms of upward mobility and lifestyle.

Cracks in solidarity and preexisting values of egalitarianism have become progressively more evident. The Adivasi practice of mutual labour exchange, for example, is in decline. Employed and non-employed villagers now essentially occupy distinct types of houses, with different needs.

Whereas the former's mud houses have clay roofs that repeated re-sealing, the latter's cement houses can easily withstand the monsoon rains. This kind of differentiation has eroded the material basis for reciprocity, which had not only been an important economic pillar of the community but also reflected an Adivasi egalitarian ethic.

Historically, this ethic represented an alternative and antidote not only to India's dominant caste-divided society, but also to its unequal capitalist economic trajectory. Now, however, it is being undermined by mining, dispossession and compensation.

While extractive projects, as Karampot's story illustrates, do not always necessarily pauperise Adivasi communities as a whole, they can create new and substantial inequalities and divisions within them, which chisel away at their egalitarian elements.

As is evident in Karampot, capitalist economic dynamics are beneficial for some, but detrimental to others. In some cases, rather than dispossession itself, it is the insidious processes of inequality unleashed by them that break down what was there before.

11. The Warli Tribe & Their Music.

Did my car slow down on its own near a house made of karvi sticks? Or did the muscle memory of my legs press on the brake ever so lightly? Whatever be the case, I had halted at the house of Anusuyabai, my host in the adivasi village of Walvanda.

And the moment I walked into her house, the sense of déjà vu became more intense. Her disarming smile told me that I have met her somewhere; and her warm, welcome house said that I have been to this house before. I walked straight into the inviting kitchen and took intimate photographs of her utensils and fireplace, dimly lit by the skylight on the roof. That's when I realized why Warlis paint in white on the brown walls inside their houses. It's for the figures to catch light, as

colours would have merged into the darkness.
When we took part in various village activities, in different houses, it dawned on me that despite not having a caste division (they were all Warlis here), there was a clear division of labour. So there was the village blacksmith, the tailor, the cattle-rearer, the hunter-gatherer, the farmer, the fisherman, and even an expert who had the perfect antidote for treating poison bites.
But what amazed me was that none of the implements that were being used here were 'bought'. They were all made by them. And necessity being the mother of invention, you could see innovation at its best. So there were separate baskets made of bamboo in two unique shapes. One for catching fish, and another strange-looking one for catching crabs! Then for trapping raptors, they had a quiver that had the resin of the mahua tree. This resin would be applied on short bamboo sticks and then laid out on a straw mat in a haphazard way around the bait. The unsuspecting bird would land on the sticky sticks to lift off its prey and would get stuck on them, never to fly free again.
An example of their innate intelligence was seen when my wife got a bee sting. When Waman, our guide, saw her hand swelling up, in one swift move he pulled out the tiny sting. Then he went into the nearby forest from where he plucked the leaves of two local plants: Burada and Tarota. He squeezed out the juice of the leaves and applied it on the sting. And hey presto, in minutes the inflammation was gone!

In one of the typical Warli houses, the walls were made of Karvi sticks tied together and the roof was made of tiles. This house was much cooler than the concrete structures nearby which were like ovens. But somehow such simple houses were being looked down upon and were being replaced with modern monstrosities. So much for 'progress'.

In the evening, we walked to the river. As we walked, on either side we saw golden farmlands ready for harvest. And the bizarre sight of scare-crows made of Kurkure packets. Another contribution of 'civilization' to the simple, pastoral life of the villages.

When I started looking for Warli artists in this village, I was told there were none. The last of them had taken up farming long ago. But I did get to see a Warli painting done on the wall of a house where there was a wedding recently. But it was not a work of art but more like a ritual; very

rudimentary. That's when it occurred to me that there's no art if there's no market. In the nearby town of Jawhar and the faraway Palghar, there's a flourishing market for Warli paintings which makes young artists take up this art form as a source of livelihood.
And I remembered the words of Inir Pinheiro, the founder of Grassroutes that has been promoting village tourism with a missionary zeal for the last eight years. He had once told me, 'We city folks should earn in the city and spend in the villages. That's one way we can help the villagers earn their livelihood right here without migrating to cities looking for jobs. It's when we come and live with them that we understand the joys of their simple living. This will even help them preserve their beautiful traditions, culture, music and art, as they greatly value our appreciation.'
This rang true all the more when I met Bhiklya Ladkya Dinda, the master of the tarpa which is a wind instrument unique to the Warlis. He was not a mere musician; he was a philosopher too. Taking a masterclass on his favourite tarpa (he had three of them), he first explained the intricacies of the two bamboo pipes. One he calls a female, and that produces treble. And the one he calls a male produces bass. Thus probably making it the only wind instrument with both treble and bass in the instrument itself! Then with a twinkle in his septuagenarian eyes, he said: 'It needs a male and a female to make great music!'

For the next 30 minutes he went into a trance and played such divine music that I felt fortunate to be living on this earth. There was a lilt and a rhythm inbuilt in his music, which

made up for the absence of percussion, and he gently swayed to a beat that only he could hear.

When I asked him if he sold these wonderful tarpas that he makes, he said that a musician has to make his own instrument. And not play on one made by another. To him each tarpa is as unique as the individual, and you should make one of your own that reverberates with your soul. Then, and only then, will great music flow out of it.

Later in the night, youngsters had gathered at the village square for the Sarvajanik celebrations. There, on the stage, the master of the tarpa got only 15 minutes of fame. The rest of the night was hogged by, you guessed it, item numbers from the omnipresent Bollywood.

The next day, on our way to the waterfall nearby, we had to cross the Jambha river. There we saw two Warli boys frolicking in the water. The older one of them was singing a Warli folk song; and soon his younger friend joined in. It was indeed music to my ears, as I saw a glimmer of hope there for the musical tradition of the Warlis. A fond hope that eventually the tarpa will win over Bollywood. At least in their village.

12. NITI Aayog vision for Great Nicobar ignores tribal, ecological concerns

Wildlife Board denotifies Galathea bay sanctuary to build port, trade zone.

In what appears to a re-run of recent developments in Little Andaman Island (A bullet through an island's heart, *The Hindu*, February 1), more than 150 sq. km. of land is being made available for Phase I of a NITI Aayog-piloted 'holistic' and 'sustainable' vision for Great Nicobar Island, the southernmost in the Andaman and Nicobar group. This amounts to nearly 18% of the 910 sq. km. island, and will cover nearly a quarter of its coastline. The overall plan envisages the use of about 244 sq. km. – a major portion being pristine forest and coastal systems.

Projects to be executed in Phase I include a 22 sq. km. airport complex, a transshipment port (TSP) at South Bay at an

estimated cost of ₹12,000 crore, a parallel-to-the-coast mass rapid transport system and a free trade zone and warehousing complex on the south western coast.

What stands out prominently in the whole process, starting with the designation in mid-2020 of the Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO) as the nodal agency, is the speed and co-ordination with which it has all unfolded. The other is the centrality of the NITI Aayog. First, on September 4, 2020, the Director, Tribal Welfare, A&N Islands, constituted an empowered committee to examine NITI Aayog's proposals for various projects in Little Andaman and Great Nicobar Islands. A copy of the 2015 'Policy on Shompen Tribe of Great Nicobar Island' was part of the communication sent out, giving an indication of the aims of the committee.

Significant changes have also been effected to the legal regimes for wildlife and forest conservation.

Ecological uniqueness

In its meeting on January 5, 2021, the Standing Committee of the National Board for Wildlife (NBWL) denotified the entire Galathea Bay Wildlife Sanctuary to allow for the port there.

The NBWL committee seemed unaware that India's National Marine Turtle Action Plan that was under preparation then (it was released on February 1, 2021) had listed Galathea Bay as one of the 'Important Coastal and Marine Biodiversity Areas' and 'Important Marine Turtle Habitats' in the country. It is

included in Coastal Regulation Zone (CRZ)-I, the zone with maximum protection.

Then, on January 18, another Environment Ministry expert committee approved a "zero extent" Ecologically Sensitive Zone (ESZ) for the Galathea NP to allow use of land in the south-eastern and south-western part of the island for the NITI Aayog plan. The October 2020 draft notification for this zero extent ESZ had ironically listed out in great detail the park's ecological uniqueness – that it is part of a UNESCO World Heritage Site, houses a range of forest types, has one of the best preserved tropical rainforests in the world, is home to 648 species of flora and hosts 330 species of fauna including rare and endemic ones such as the Nicobar wild pig, Nicobar tree shrew, the Great Nicobar crested serpent eagle, Nicobar paradise flycatcher and the Nicobar megapode. It also notes that the park is home to the indigenous Shompen community.

The notification says that an ESZ is needed to protect the park from an ecological, environmental and biodiversity point of view, but goes on in the very next para to propose a zero extent ESZ for nearly 70% of the periphery of the park.

It is almost as if the unique diversity of life just listed suddenly disappeared because of an arbitrary line drawn to allow a slew of high value projects.

This is illustrated in the case of the Giant leatherback turtle and the Nicobar megapode, two charismatic species for

whom Great Nicobar is very important. The beaches here, like at the mouth of the river Galathea in South Bay are among the most prominent nesting sites globally of the Giant leatherback. It for this reason that the bay was declared a wildlife sanctuary in 1997, but has now been denotified to allow for the transhipment port.

In his 2007 study of the Nicobar megapode, the globally endangered bird unique to the Nicobars, K. Sivakumar of the Wildlife Institute of India documented 90% of this ground nesting bird's nests to be within a distance of 30 m from the shore. He notes that the existing protected area network in Great Nicobar is not designed for the protection of the megapode and recommends that the entire west and southern coast of Great Nicobar – precisely the area sought for the NITI Aayog proposals – be protected for the megapode and other wildlife like nesting marine turtles. This is also in stark contrast to the current move to create a zero extent ESZ for the Galathea National Park.

Threat to Shompen

Similar concerns exist about the impact on the Shompen community. The proposed project areas are important foraging grounds for this hunter-gatherer nomadic community and the official Shompen Policy of 2015 specifically noted that the welfare and integrity of these people should be given priority "with regard to large-scale development proposals in the future for Great Nicobar Island (such as trans-shipment port/container terminal etc.)". Now,

large forest areas here could become inaccessible and useless for the Shompen.

Available evidence suggests that issues of the geological volatility of these islands are also not being factored in. The December 26, 2019, tender document by WAPCOS Limited for a 'Traffic Study for Creating Transshipment port at South Bay, Great Nicobar Island' justifies the port here by noting that "the topography of the island is best suited, which has not been damaged much even by the tsunami on 26.11.2004 (sic)".

Yet, a 2005 Earthquake Engineering Research Institute (EERI) Special Earthquake Report by a multi-disciplinary team from the Indian Institute of Technology (IIT) Kanpur, recorded witness accounts of 8-metre-high tsunami waves hitting the Great Nicobar coast on December 26, 2004. "The lighthouse at Indira Point, the southernmost tip of the Great Nicobar Island, which was on high ground before the earthquake," the report notes, "is now under water, indicating a land subsidence of about 3-4 m."

Loss of life and property then was limited because the Great Nicobar coast is largely uninhabited. This raises questions over safety of life, property and the investments in this zone and that too without accounting for the complex ecological, social and geological vulnerabilities here. Little, if anything, is also known of the NITI Aayog vision document itself – What is its rationale? What was the process of its creation? Which agencies/individuals were involved? What impact assessments, if any, have been done at all?

Neither the NITI Aayog nor the agencies that are facilitating it with zeal and efficiency have made this available.

13. Panel looking into pastoral communities' forest rights to visit J&K

Members of a newly appointed committee to facilitate legal recognition for particularly vulnerable tribal groups (PVTG), decided to visit four states, including Jammu and Kashmir. The committee — constituted by the Ministry of Tribal Affairs (MoTA) on February 21 with former MoTA secretary Hrusikesh Panda heading it — met for the first time on March 16, 2020. "It was felt that FRA automatically extends to J&K with the abrogation of Article 370. It was therefore decided that the committee will visit the union territory," a source told Down to Earth.

The union government, on August 5, 2019, revoked Article 370 of the Constitution, which granted special privileges to Jammu and Kashmir, bifurcating the state into two union territories.The other states committee members decided to visit were Odisha, Madhya Pradesh and Uttarakhand. The committee was divided into two sub-committees: One to look into the recognition and vesting process of habitat rights of PVTGs and the second to look into the seasonal resource access to nomadic and pastoralist communities. The meeting was attended by the officials from MoTA, Ministry of Environment, Forest and Climate Change and the Ministry of Minority Affairs. Non-official members, including members of state governments were absent, however, reportedly because of the novel coronavirus disease outbreak. Committee members will also visit the Simlipal Tiger Reserve in Odisha where habitat rights of the Mankidia community were in limbo since 2016. The community's rights were approved by a district level committee (DLC) on August 8, 2016.

Land titles have, however, not been granted since then.Although the community has the DLC's legal approval, Odisha's forest department is not willing to part with land. Under FRA, habitat rights are given to PVTGs and pre-agriculture communities and it gives them access to the resources in the area recognised as their habitat.Despite repeated clarifications by the ministry, no progress was reported by states in recognising habitat rights, the order that constituted the committee had said.

MoTA, through the order, had constituted two committees on February 21: one, under NC Saxena, a former Planning Commission and National Advisory Council member and the other under Panda. The committee under Saxena will give recommendations for the creation of model guidelines for conservation, management and sustainable use of community forest resources (CFR guidelines) under the FRA. The guidelines — according to the MoTA order — provide, "a clear understanding of the concept pertaining to CFR and also conceptual framework on CFR and detailed procedural aspects to encourage implementation of the community forest management and conservation regime in the spirit of the Act."

14. EDUCATION FOR THE TRIBES

Education for the tribal people. as for anyone else in India has today become a matter of great importance. Ever since India gained independence a considerable amount of money and resources have been spent so that unprivileged, undeveloped and neglected tribal people could get a fair deal. It has been generally recognised that India being a welfare state cannot afford to leave a particular section of its population behind in the field of education, as indeed in any other field. This would be against the principles of democratic development of the country. There is hardly any necessity. therefore. to emphasise the need and importance of education

for these people. These needs are felt by everyone every-where. An earnest endeavour is being made by all concerned at all levels to bring these less privileged people, the scheduled tribes. on the same educational level as that attained by the more advanced communities of India.

If one would consider the amount of money and manpower being utilised for, the purpose one could naturally expect that the tribal people would be able to shorten the gap in the educational levels that exist between them and their neighbouring communities within a very short period. But the reality of the situation tells a different tale. One would have to accept that the tribal societies have made slow, though steady. progress and today they are not what they were 20 or 30 years ago. But at the same time one feels that their development in general and their achievements in the field of education in particular are not what one would desire them to be. There is some snag some-where. In spite of the best efforts of the Central and State Governments. voluntary agencies and social workers, the tribal people have not achieved much educational success. There are many and varied problems which need urgent attention from those concerned in any way with the betterment of the tribal people.

Studies on Education Several significant and useful works have been done on tribal education. Aiyyappan discusses about the major problems of education of the tribes and gave a number of suggestions regarding schools, vocationally biased Education, prizes and literacy programme for youth.

N.V.N. Bapal, S.K. Bannerijee and MN- Basu have contributed much to tribal education. Basu in his papers outlines the role of the anthropologists in imparting education to the tribal people. He focuses attention on the significance of mother tongue as the medium of instruction and emphasised the needs for scientific collection and vocabularies of tribal children. He advocates careful planning of tribal Education which may be done by a group of scholars who have actual experience of field work in this line. Similarly, P.C. Biswas also suggests a Board of Tribal Education consisting of experts on tribal affairs. He recommended that all tribal adults should be educated. KP. Chattopadhyaya suggests Syllabus after analysing the basic characteristic of Tribal system of education, . Das Gupta' has studied a sample of 181 tribal students from different angles. N.K. Das Gupta has written a monograph on Santal education. T.C. Das9 has highlighted the problems of script and teachers and has given a scheme, for the education of Gond. There are many scholars who have tried to throw some light on the problem of tribal education. Mention may be made of Hilda Raj (1952). L-N- Karn lravati Karve". S.K. Kaul". etc., G.K. Kopikar discusses the problems in the Thana district of Maharashtra in his small brochure called the education of the Adivasis.

Tarabai Madok wrote a booklet based on her experiences of running an Adivasi school. Here it is worth while to refer to the National Seminar on Tribal Education in India held in 1967 at New Delhi under the auspices of the National Council of Educational Research and Training. The papers discussed in the seminar highlighted the existing facilities and ways in

which they could be implemented. T.B. Naik's publication on the results of a research project on the impact of education on the Bhills of Madhya Pradesh. probably gives for the first time full scale applied anthropological work in education. Some of the papers are useful which are contributed to the "sociology of Education in India". Among tribal problems, Special attention has been given to the study or educational psychology - The National Fundamental Education Centre, now Department of Tribal Education in NCERT, established in l956, undertakes some researches in tribal education in addition to training the personnel of social education- A team of anthropologists have published papers from time to time on the basis of their field enquiries. Vimal Chandra one of the Regional Directors of Backward classes, made a historical view historical review of the progress of education among the scheduled tribes and scheduled castes. He suggests that there has been a considerable development in the field of education among the scheduled castes and scheduled tribes.

15. People living near mining activities at increased risk of diseases, says study

- A latest government study has found that mining activities in the coal-rich Tamnar area of Chhattisgarh have put the local population, mainly tribal people, at an increased risk of acute respiratory diseases and tuberculosis.
- The study reveals that in the case of tuberculosis, the disease burden rate in Tamnar is nearly double the

national rate and almost triple the rate in the state, highlighting the adverse impact of mining.

- However, experts feel a similar story plays out in all resource-rich areas of India where local people suffer in absence of proper checks and balances on mining activities.

Raigarh is one of the crucial places for coal mining in Chhattisgarh, the central-eastern state which accounts for over 18 percent of the country's coal production. The massive mining is silently taking a toll on the health of those living in and around Raigarh and similar areas.

A recent study that assessed the health of the villagers in Tamnar block of Raigarh, where there are several coal mines, revealed that nearby mining activities have put the "tribal

population of Raigarh at increased risk of acute respiratory infection (ARI), tuberculosis, road traffic accident (RTA), etc." The study was by Madhya Pradesh-based health research institute Indian Council of Medical Research-National Institute of Research in Tribal Health (ICMR-NIRTH) which conducted the cause of death survey in the 33 villages of Tamnar block between December 1, 2018 to November 30, 2019. For health assessment of villagers, the survey 1,713 individuals from 984 households from 33 selected villages of Tamnar block for clinical examination.

According to the study, the investigation included the collection of data on demographic and socio-economic particulars of the households, anthropometry, clinical examination for general morbidity and nutritional deficiency disorders. pulse, blood pressure, random blood sugar were measured.

The study emphasised that apart from environmental health hazards, "undernutrition increases the risk further for various diseases." It noted that among non-communicable diseases, "cardiovascular diseases were the leading cause of death" while "tuberculosis was the major cause of death in infectious and parasitic diseases category."

According to the study, hypertension (30 percent) was the leading pre-existing disease followed by diabetes (12.6 percent), stroke (8.3 percent), tuberculosis (4.3 percent), chronic respiratory disease (three percent) and – together contributing to over 50 percent of the disease burden in the area.

It found “excessively high levels of malnutrition among children and adult population in the region.” It held that among the pre-school children “acute respiratory infection/ upper respiratory tract infection (20.9 percent) constituted the most common morbidity” while, among the adults, hypertension (21.8 percent) was found to be the most common morbidity.

The study revealed that the tuberculosis burden among the study population was nearly double (363/100,000 population) the national rate (199/100,000) and triple the notification rate of Chhattisgarh (103/100,000).

The report also found a high rate of prevalence of fungal infection in the people of the area and noted that “various causes such as environment, overcrowding, diabetes mellitus, bathing in contaminated water and poor living conditions may be major factors.”

Rajesh Tripathi of Raigarh-based Jan Chetna Manch, a social group working for the mining-affected people, said the report itself highlights that “Kelo river in Tamnar is polluted due to waste disposal from mining activities.”

“I have been working in this area for about 30 years now – since 1991 – but people of this area that’s crucial for the government in terms of coal reserves, have rarely undergone any health survey. The miners that are active in the area promise in their applications that health facilities will be provided to the local villagers but all that exists on paper only,” Tripathi told Mongabay-India.

In fact, the data from local police reveals that every month, at least 70 people die in road accidents in Tamnar and the leading cause of those accidents is the high traffic of heavy vehicles due to coal mining, Tripathi said.

He noted that an increase in disease burden among people living close to mining areas is not a new phenomenon as repeated studies across India and the world have revealed the same but authorities still don't take it seriously.

To improve the situation, the study recommended strengthening of the programme for anaemia and malnutrition, improvement in health facilities and filling up of the vacant post of specialist doctors and trained health workers along with laboratory facilities in the community and primary health centres, provision for safe drinking water especially in two villages Mudagaon and Saraitola and intervention programmes for non-communicable diseases especially for hypertension and other cardiovascular diseases.

Coal is among the most important minerals in India's mining sector. Photo by ECSP/Flickr.

A similar story of ill impacts of mining on health in other areas

While the country and the world transition to cleaner sources of energy, the transitions for the people that have been impacted by coal mining, have not been smooth. The damages, in terms of environment and living conditions, in resource-rich areas around the country, are often irreversible due to the lack of intervention.

The situation may only get worse as India plans to massively increase coal production over the next five years. For instance, the coal production of Coal India Limited (CIL), which produces the majority of India's coal and is considered the largest coal producer in the world, is projected to further

increase from 630 metric tons (Mt) to 1000 Mt in the next four years.

A major increase in production is expected to come from coal-rich areas like Korba Raigarh, Talcher etc. Over the years, the "resource curse" in many of such mineral-rich areas has been well documented across India where the impact of unchecked and uncontrolled mining took a toll on predominantly poor or tribal people.

In a 2010 paper, Under-mining health: Environmental justice and mining in India', that focused on health impacts of iron-ore mines in Keonjhar in Odisha, researchers found that those living closer to mines reported a higher incidence of respiratory illness and more workdays lost due to malaria.

"Essentially, we hypothesised that there is a potential environmental pathway from mining to the health impacts," study's co-author Subhrendu K. Pattanayak of Duke University, USA, told Mongabay-India. "For malaria, this would be through mosquito ecology – in a disturbed landscape (e.g., when land is torn up, puddles form and this is what mosquito larvae need to hatch)," he said.

For respiratory illness, this would be through air pollution-related to the mining and the transportation of ores. "Our statistical analysis of villages more exposed (close to mines) compared to villages less exposed (far from mines) confirms these hypotheses. Those more exposed, had higher rates of diseases, compared to those less exposed. There were also occupational channels – i.e., you are exposed in the mine itself. And indirect channels – income from mining allows

you to invest in protection. We found weak or mixed evidence on these other channels," said Pattanayak, Oak Professor Environmental and Energy Policy at Duke University.

Shubhayu Saha, Rollins School of Public Health, Emory University, Atlanta, who was a co-author of the Odisha study said evidence on adverse health consequences of mining continues to grow around the world.

"Worth noting is the increase in the literature related to mental health impacts, besides respiratory and vector-borne illness (like malaria) that we highlighted in our paper. Unregulated mining and destruction of natural habitats more often than not force the displacement of communities living in these areas for generations. Not only does it lead to adverse economic and dietary impacts, but also to a deep sense of loss related to the cultural and emotional connection of these people with the environment that had sustained them," Saha told Mongabay-India.

A recent exploratory study to determine the health and livelihood conditions of coal workers in the Jaintia Hills in Meghalaya where rat hole mining is prominent finds respiratory problems as the most prevalent disease. As many as 511 household members were surveyed, out of which 266 respondents were coal labourers (coal digger, cutter, cart puller, owner, and others). Cholera and malaria, typhoid, skin disease were also reported. Tuberculosis was found to be relatively low, followed by vision defects and broken bones. The occurrences of these diseases in the mining areas were

due to inhalation of dust particles and subsequent use of contaminated water. It is also important to note that majority of the household members are prone to suffer multiple diseases at a time, the authors note in the paper.

Mining, as typically practised (unless there are sufficient safeguards) generates environmental problems that have health and other implications, the researchers said.

Benefits of mining to locals may not outweigh the burden of health impacts

Among other things, one of the basic defence of policymakers, to continue mining, is that resource crunch is vital for the development of the nation as well as of the local areas where mining is done.

However, social workers like Tripathi, who have been working in mining dependent areas like Tamnar states that the locals who are impacted by mining the most rarely get the benefit of that mineral even as they pay the highest cost of that activity.

“No matter which state you take, the story is the same everywhere,” said Tripathi.

For instance, the coal-rich Korba region of Chhattisgarh and Singrauli in Madhya Pradesh, considered the energy hub of the country, are facing similar “resource curse”. People living close to power plants fail to get electricity while it is supplied to distant parts of the country, their water bodies get contaminated due to polluted water from mining and power

generation activities, and the air quality is very poor leading to respiratory problems.

“Of course, if the livelihood, income, and other benefits are large, these are costs one may choose to accept. However, often there is a disconnect between who is bearing the costs (e.g., economically impoverished and politically disenfranchised) and who is gaining the benefits,” said Pattanayak adding that India fails on the policy and legislation at a few levels.

He explained that unless the government and the mining companies are operating in good faith (which is not common), the country does not have good policies or laws to either minimise the environmental damage – pollution, land degradation, etc. or to compensate those directly impacted so they can protect themselves or take other adaptive actions.

Pattanayak also said, even when the government and companies are aware and committed, the laws and policies are “toothless”, indicating that they exist only on paper and are difficult to implement.

“Essentially the health impact is what ‘academic economists’ would call an externality – the buyer wants the ore, the company incurs a cost in getting the ore to the market and so charges the buyer for this ore. But the collateral damage on the people in and around the mines is no one’s cost,” he said.

“Maybe the buyer would be willing to pay extra to help reduce the costs or compensate for the costs, in which case the seller would be willing to charge for it and take extra

precautions in the extraction process. These needn't be direct financial costs … they could be indirect costs because of avoiding fines and penalties and or indirect benefits such as schools and hospitals built in the affected region. In most settings, neither side has any incentive because these are health costs to 'others'," Pattanayak explained.

However, those working on the ground like Rajesh Tripathi believe otherwise. "Until people are made partners in mining activities they will continue to suffer as no one will ensure that promises made on paper while setting up such activities and seeking clearance for them are fulfilled. We have been demanding the involvement of people in the whole process so that we can ensure that the welfare of local people is taken care of and we will continue to do so until we achieve that."

16. Launch of Tribal TB Initiative

In news

- 'Tribal TB Initiative' in pursuit of TB Mukt Bharat was launched recently.
- **Ministry:** Ministry of Health

- A Guidance Note on Joint Action Plan for Tuberculosis (TB) Elimination, a Special Edition of Tribal Ministry's Publication 'ALEKH' on TB, and a document on Tribal Tuberculosis (TB) Initiative was also released.
- Over 104 million tribal population lives in India, across 705 tribes, accounting for 8.6 % of India's population.
- 177 tribal districts were identified as high priority districts where physical remoteness, malnutrition, poor

living conditions and lack of awareness contribute to the vulnerability of the tribal population to TB.

- Initially, the activities of the joint plan will focus on 161 districts across 18 identified States.
- This would involve periodic TB active case finding drives and provision of TB Preventive Therapy (IPT) to identified vulnerable population and develop long term mechanisms for vulnerability reduction.

- Lakshadweep and district of Badgam in Jammu and Kashmir have been declared TB Free on World TB Day 2021.
- The government has already increased the Budget allocation for TB in India a four-fold in the last 5 years.

Key takeaways

- Between January and February 2020, there were 6% more cases reported than in 2019.
- As a result of the lockdown, notifications in the public sector fell by 38% and 44% in the private sector in April and May.
- Of the reported 24.04 lakh TB cases in 2019, treatment success was 82%, mortality rate was 4%.
- The approved budget toward the programme was decreased from ₹3,333 crores in 2019-20 to ₹3,110 crore in 2020-21.
- The report said 20,892 (42%) of patients were initiated on a shorter MDR-TB regimen at the time of diagnosis.
- This is a significant decline from 2019.

17. The Khasis - One of the World's Largest MATRILINEAL society

In one of the world's last matrilineal societies, women control property and inheritance and dominate public spaces. So, why are some women seeing change as a good thing?

During my travels across mainland India, especially in small towns and villages in the north, I hardly saw any women-run shops or marketplaces. In a sit-down eatery in Uttar Pradesh, I watched men make flatbreads and mash vegetables for curries while male customers gobbled them up. Between Kolkata and Gorakhpur, I sat sandwiched between men in passenger trains passing through the rural countryside. On most occasions, women were absent from public spaces.

But in the north-eastern Indian state of Meghalaya, things were different.

In Iewduh, one of region's oldest and largest open markets located in Meghalaya's capital city Shillong, women lined the crowded bazaar streets selling local vegetables, chopped meat and handmade crafts. Female elders called *mei* walked through the aisles controlling the trade and ordering men who worked for them to lift bags full of fresh produce.

I returned to Meghalaya five more times before the pandemic halted my travels. During those visits, I saw that in many places in Meghalaya, women not only occupied space; they dominated them. That's because today, Khasis – who account for state's largest ethnic community – are one of the last existing matrilineal societies in the world. Here, children receive their mother's last name, husbands move into their wife's home, and the youngest daughters inherit the ancestral property.

But who are the Khasis?

There are many theories about their origin. According to local folklore, Khasis come from seven divine clans. In the 1967 book, The History And Culture Of The Khasi People by Hamlet Bareh, the Indian author and historian traces them to an ancient Austric race in South-East Asia who descended from a Mon-Khmer group of people in the remote Burmese jungles. While it's uncertain when Khasis migrated west to the mountains and foothills of north-eastern India, linguistic evidence shows that their language – Khasi – has similarities to Mon-Khmer dialects.

Today, most Khasis live in Meghalaya, which became an independent state in 1972. During the Bangladesh Liberation

War in 1971, some Khasi families became separated and now live across the border from Meghalaya in Bangladesh. Another significant portion of the population lives in the neighbouring Indian state of Assam.

Khasi historian Amena Nora Passah, who teaches at North-Eastern Hill University in Shillong, said that Khasis are people of oral tradition. But ironically, according to oral history, they have patriarchal roots.

As warriors who often battled with other groups for land, Khasi men often went down to the plains for clashes. During those battles, some men died. Others settled for a new life in the plains. Left without their partners, Khasi women would remarry or find other partners, and it often became difficult to determine a child's paternity.

"Society might have labelled those children 'illegitimate'," said Passah. "At some point, our ancestors thought that they didn't want this slur on their women or children. So, they decided that children should have one last name: the mother's."

Khasi matriliny shares similarities with the world's other handful of matrilineal societies, such as wealth and property passing from mother to their daughters, and descent through the mother's line.

Traditionally, Khasis live in close-knit extended families or clans. Since children take their mother's last name, daughters ensure the continuity of the clan. Daughters have the liberty to live in their ancestral home or move out, except for the youngest daughter (called *ka khadduh*), who is the custodian of

the property. Even after her marriage, she never leaves home. She looks after her parents and eventually becomes the head of the household after her mother's death.Lauretta Sohkhlet is one of those youngest daughters from Tyrna, a scenic touristy village 65km from Shillong. Sohkhlet and her husband reside in her mother's home. While she will inherit the property after her mother's death, her brother, Edilbert, is the guardian of the family. As the *kni* (maternal uncle) of Sohkhlet's children, Edilbert, who is a school principal in Tyrna, provides money to his sister's family.

He lives away from his own family, which is common among some Khasi families. A Khasi woman never joins her husband's household, rather he joins hers, but today, some men also live away from their wife and children, especially when their wife is away for work.

"My wife and children live in Shillong. I go see them often, but I also have to care for my sister and mother," said Edilbert, who's torn between the two families. In recent years, he decided to turn part of his mother's home into accommodation for travellers in order to earn an additional income for his sister's family.

Passah explained the importance of the kni in Khasi culture. "As the guardian, he's in control of the management and distribution of the ancestral property. No decision in the family was taken without the stamp of his approval," Passah said.

She also explained that in the past, while fathers didn't contribute financially to their children and wife, they would provide money for their sisters and parents. "[The father] would come to his wife's home late at night. In the morning, he's back at his mother's home to work in the fields," Passah said.

With colonisation and missionary education, however, some Khasis left their villages, looking for work in towns. When nuclear families emerged, the knis' power began to decline, and while villages still follow the traditional matrilineal structure, in some urban Christian families today, fathers are the head of the household.

"I always say that Meghalaya is a matrilineal society with patriarchal nuances," Passah said, explaining that it is different than a matriarchy where women rule society and government.

Despite that, it's easy to notice differences in Khasi culture compared to male-dominated regions of India. While it's common for women to be catcalled or face other forms of street harassment in India, I encountered none of that in Meghalaya. Strangers didn't force conversations with me, but if I had trouble finding my way, they always helped me.

In Shillong, I travelled with locals in crowded public taxis, and male passengers respected my privacy and made sure I was comfortable. Unlike in other remote locations in India, women here lead independent lives, like my host from Mawsynram, a quaint village that's considered one of the rainiest places on Earth. My host, who was in her late 30s,

lived alone and was unmarried – which might be considered taboo elsewhere in India. When she instructed male drivers to take me to caves and waterfalls, they always listened to her. And while people in India always ask me if my parents (mostly my father) are okay with me travelling alone, this question has never popped up in Meghalaya.

So when Khasi author Daribha Lyndem told me recently that says she feels safer in Meghalaya than in Mumbai where she now lives, I understood where she was coming from.

"In my experience, I feel men are respectful [to women] in a less patronising manner," she said. Lyndem added that unlike most parts of India, Khasi women don't have to contend with the pressures of arranged marriages. "Not to say that misogyny does not exist, but in Meghalaya, women's voices may be ignored rather than stifled like in the rest of the country," Lyndem added. "Girls being born is as much a celebration as boys being born."

Patricia Mukhim, an activist and editor at The Shillong Times, an English-language newspaper, said that in the rest of India, patriarchy is embedded in all aspects of life, "from men making decisions to women not occupying a place in politics, academia, business and every other sphere". While girls elsewhere in India often face barriers to study and work, Mukhim believes things are different with Khasis. "Khasi women enjoy social mobility and there are no bars for them to [achieve economic mobility]," she said.

I was reminded of one of the female elders I met who ran the wholesale vegetable market back at Iewduh. She'd told me

that during her youth she had left her husband, raising her children on her own while trading vegetables.

"He wasn't competent enough to provide for us. I didn't need his support so I asked him to leave," she said, noting that she's had multiple partners since. As the youngest daughter, she became the custodian of her family property and she now manages a team of male and female traders.

But as more Khasis migrate to towns and move away from their large, close-knit clans, there's a new burden on mothers. "[According to the matrilineal tradition], men aren't obliged to care for their children when he leaves. This has led to a surge in women-headed households [in Meghalaya]. In the past, the extended family would support the abandoned mother, but now we have smaller families and the mother has to rely on herself," Mukhim said.

In addition, some men in Meghalaya are campaigning for change. An organisation called Syngkong Rympei Thymmai, a sort of modern-day men's-liberation group, is fighting to end the matrilineal system. One such man told BBC News, they "do not want to bring women down … we just want to bring the men up to where the women are."

Accordking to Mukhim: "They feel that because children carry the mother's name, they are neither here nor there. They hold the view that men don't feel secure enough in their wife's home nor their own family because they have left their parental home."

Passah said that only a minority of Khasis support this idea to abolish matriliny. "Look, it's a society in transition. Some families are already giving an equal share of the property. The youngest daughter might get the major share because she's responsible to look after the ageing parents," Passah explained.

Although some Khasi fathers now head up certain households, Passah – like most people in Meghalaya – believes that age-old Khasi cultural practices through the mother's line are so embedded in their lives that Khasi's unique matriliny will survive for decades to come.

Meanwhile, things are also evolving for Khasi women. The traditional matrilineal society has always kept women out of the larger decision-making process in social institutions like the village council. But in recent times, Passah believes that it's slowly beginning to improve, especially in urban localities. "I'm one of the two women at the village council in my colony," she said. "We've never had women there, so this is a step forward."