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PAPER - 1

PHYSICAL & ARCHAEOLOGICAL ANTHROPOLOGY

1. A comparison between genomes of a Neanderthal in Siberia, and modern humans in Africa



A comparison between genomes of a **Neanderthal in Siberia**, and **modern humans in Africa** recently revealed insight into their migratory and interbreeding history.

Key Findings of the comparison:

- A Neanderthal who lived **120,000 years ago in Siberia** with those from modern humans in **sub-Saharan Africa** highlighted the **migratory and interbreeding** history of both species.
- **Interbreeding Timeline:** Neanderthals and anatomically modern humans initially interbred around 250,000 years ago, much earlier than the previously estimated 75,000 years ago.
- **Genetic Footprint:** A group of Homo sapiens from Africa interbred with Neanderthals in Eurasia during that period, which left a genetic footprint in the DNA of Neanderthals.
 - Approximately **6% of a Neanderthal's genome** found in Siberia contains **human DNA**.
- **Sub-Saharan Populations:** Some sub-Saharan populations of modern humans inherited Neanderthal DNA when interbred groups of humans migrated back into Africa.
- **Non-Coding Regions:** Most of the human DNA found in the Neanderthal genome was in non-coding regions, suggesting that human genes were selected against during Neanderthal evolution.

Significance of the study:

- Neanderthal DNA in modern human genomes and vice versa can **predict more accurately the impacts on interbreeding** to the physical characteristics of both groups.
- The **migration patterns and interactions** between modern humans and Neanderthals gives insight on human evolution.
- It can open doors for **future research** like exploration of genome of the population, but it is **limited mainly with Niger-Congo-related** ancestry.

About Neanderthals:

- Also known as *Homo neanderthalensis*, they were an **extinct species of archaic humans**, named in 1864 after the **Neander Valley in Germany**.
- They lived in **Europe, southwest and Central Asia**, from about 400,000 to 40,000 years ago and the **first humans to survive a cold glacial ecosystem**.
- **Appearance:**
 - A long, low **skull** (compared to more globular skull of modern humans) with a characteristic prominent **double-arched brow ridge** above their eyes.
 - Central part of the **face protruded** forward with a wide nose, may be an adaptation to living in colder, drier environments.
 - Their **front teeth** were large, and **lacked a well-developed chin**.
- **Special ability:** Neanderthals were **skilled tool makers**, as evidenced by excavated objects such as **spears and flint handaxes**.
- They developed an innovative stone technology called **Levallois technique** to make **pre-shaped stone cores** that could be finessed into a finished tool at a later time.
- **Diet:** meat, plants and fungi, shellfish etc.

2. Chromosomal Disorders Detected in Ancient Skeletal Remains

Researchers have identified chromosomal disorders, including six cases of Down syndrome and one case of Edwards syndrome, in prehistoric skeletal remains dating up to approximately 5,500 years old.

Rare Ancient Cases:

- **Chromosomal trisomies**, specifically Down syndrome (trisomy 21) and Edwards syndrome (trisomy 18), were identified in nearly 10,000 genomes from ancient skeletal remains.
- The discovery includes cases dating back to the Bronze Age (2,700 BCE) and the Neolithic period (3,500 BCE).

About Down syndrome:

- Down syndrome, also known as **trisomy 21**, is a **genetic condition** caused by an **extra copy of chromosome 21**.
- It is caused by a **random error in cell division** that results in the **presence of an extra copy of chromosome 21**.
 - The type of error is called **nondisjunction**.
- Symptoms include a **flattened face**, almond-shaped eyes, short neck, small ears, tongue protrusion, **white spots on the iris**, small hands and feet, and a single line across the palm (palmar crease).
- It can cause **delays in speech and self-care skills** like feeding, dressing, and using the toilet.
- It can **affect kids' ability to learn** in different ways, and most have mild to moderate intellectual disability.
- There is **no single, standard treatment for Down syndrome**.

About Edwards syndrome:

- Edwards syndrome (**trisomy 18**) is a **genetic condition** that causes **physical growth delays** during fetal development.
- The condition occurs when a person has an **extra copy of chromosome 18**, which is **random and unpredictable**.
- Edwards syndrome can affect anyone.
- Children diagnosed with trisomy 18 have a **low birth weight, multiple birth defects** and **defining physical characteristics**.
- The likelihood that a parent will have a child with Edwards syndrome (trisomy 18) **increases with maternal age** at the time of pregnancy.
- If a parent had a child with Edwards syndrome (trisomy 18) and becomes pregnant again, it's unlikely they'll have another child diagnosed with the same condition (no more than 1%).
- **Life expectancy for children** diagnosed with Edwards syndrome is **short due** to several life-threatening complications of the condition.
- Children who **survive past their first year** may face **severe intellectual challenges**.

3. Major new research claims smaller-brained Homo naledi made rock art and buried the dead

As per the recent discovery, Homo naledi had a brain one-third the size of humans but displayed intelligence far beyond.



Homo naledi

4.2 - 3.8 million years ago

Australopithecus anamensis:
Has a combination of traits found in both apes and humans, including the upper end of the shin bone, and a human-like ankle joint, which indicates regular upright walking. Discovered in 1965 in northern Kenya.

335 - 236 thousand years ago

Homo naledi:
An extinct species of archaic human discovered in 2013 in the Rising Star Cave, Cradle of Humankind, South Africa, dating to the Middle Pleistocene period. Its teeth differ from other Homo species that lived around the same time.

300 - 28 thousand years ago

Homo neandertalensis:
Commonly known as neanderthals, they are known to be the closest relatives to humans. They were shorter and stockier than Homo sapiens and had distinct features in their skulls, including a large middle part of the face, angled cheek bones and a huge nose used for humidifying and warmer cold, dry air.

200 thousand years ago to present

Homo sapiens:
Modern human beings evolved in Africa during a dramatic climate change about 300,000 years ago. Modern humans are characterized by the lighter build of their skeletons compared to earlier humans and large brains.

PHOTO CREDIT: GETTY IMAGES
SOURCE: SMITHSONIAN NATIONAL MUSEUM OF NATURAL HISTORY

abc NEWS

- Homo naledi is an **extinct species of archaic human** discovered in 2013 in the Rising Star Cave, Cradle of Humankind, South Africa.
- The discovery can be dated to the **Middle Pleistocene 335,000–236,000 years ago**.
- Homo naledi had **human-like hands** and feet but a **brain a third of the size of humans**.

Key Highlights of the Study:

Did Homo naledi bury their dead?

- The earliest secure evidence for burial in Africa comes from the **Panga ya Saidi cave site** in **eastern Kenya**, excavated by our team and dated to **78,000 years ago**.
 - This burial of a **Homo sapiens child** meets rigorous criteria agreed upon by the scientific community for identifying **intentional human burial**.
- Homo naledi burials precede the **Panga ya Saidi burial evidence** by as much as **160,000 years**.
- It significantly pushes back evidence for **advanced mortuary behaviour in Africa**.
- It also implies **intentional burial wasn't limited to our species** or other big-brained hominins.
- But there is no evidence of funerary behaviour at **Rising Star Cave**, as per the standards set by the **palaeoanthropology community**.

Did Homo Naledi make rock art?

- The report describes engravings in the form of deeply impressed **cross-hatchings and geometric shapes** such as **squares, triangles, crosses and X's**.
- Claims are made about the preparation of and potential repeated **handling or rubbing of the associated rock surface** and the use of a similar "tool" to the one they claim was found with the alleged burial.
- Rock art has only reliably been **linked to Homo sapiens** and, in rarer cases, some of our large-brained ancestors.
- The rock art at Rising Star Cave is that it's **undated**. To imply any link with Homo naledi requires firm dates.
- It is **spurious to claim the engravings were made by Homo naledi** in the absence of dating, rather than by another species (and potentially at a much later date).

Did Homo Naledi light up Rising Star Cave?

- The report also claims the **mortuary and engraving activities** in Rising Star Cave involved the strategic use of **fire for illumination**.

- The researchers have found **new evidence for hearths, including charcoal, ash, discoloured clay and burned animal bones.**
- Yet none of the scientific research needed to confirm the **use of fire has been carried out.**

SOCIO – CULTURAL ANTHROPOLOGY

4. Study finds field of forensic anthropology lacks diversity

The field of forensic anthropology is a relatively homogenous discipline in terms of diversity (people of color, LGBTQ+ individuals, people with mental and physical disabilities, etc.) and this is highly problematic for the field of study and for most forensic anthropologists. At the core of the forensic sciences are basic sciences and the STEM fields, which have struggled with increasing diversity and inclusion.

The lack of diversity in the STEM fields and the forensic sciences is concerning because it can limit the types of questions being asked in research. "As forensic practitioners, we do not reflect the demographics of the highly dynamic populations that we serve across the country. Relevant and successful research relies on a diversity of ideas, perspectives and experiences, and without such diversity, the field stagnates and does not keep up with important issues that are relevant to society," explained corresponding author Sean Tallman, Ph.D., RPA, assistant professor of anatomy and neurobiology at Boston University School of Medicine (BUSM).

In order to explore the demographics of the forensic anthropological community and perceptions of diversity and inclusion, an anonymous survey was sent out to the Anthropology Section of the American Academy of Forensic Sciences (AAFS), which included more than 500 individuals. The survey consisted of 48 questions that asked about demographic information; whether participants believe that diversity exists in various educational contexts; their experience with diversity, inclusion, and harassment at the

AAFS annual meetings; and what the field could do to increase diversity and inclusion.

The data then was analyzed for trends in order to propose actionable measures that could produce meaningful change that positively impacts diversity and inclusion in forensic anthropology. According to the researchers they found many forensic anthropologists had experienced or witnessed discriminatory behavior within the AAFS, which is the scientific society that most forensic practitioners maintain membership in the U.S. "Problematically, many individuals in forensic anthropology do not know how to report incidents of discrimination or harassment that occur at the AAFS," added Tallman.

While the discipline has been slow to address issues of diversity, inclusion and discrimination, Tallman believes the field can mitigate these issues through regular tracking of membership demographics by the AAFS, reassessing graduate admission requirements and indicators of success, creating mechanisms for reporting discrimination and harassment, targeted outreach, and developing mentorship opportunities.

"Striving for a culture of diversity through inclusion in forensic anthropology helps to reflect the greater populations that we serve and encourages us to challenge our own assumptions and inherent biases that can complicate the analysis of skeletal remains in forensic casework. Diversity and inclusion initiatives should be substantial and well-supported, rather than merely token gestures to increase the number of minorities or underrepresented groups."

5. Discrimination based on caste is pervasive in South Asian communities around the world – now Seattle has banned it



For now, this ordinance will help put the spotlight on this centuries-old system that denies equality to a substantive section of the population on the basis of an oppressive ideology. Seattle became the first city in the US to outlaw caste-based discrimination against immigrants from stigmatised groups in South Asia's traditional social hierarchy.

The ordinance, adding caste to Seattle's existing anti-discrimination policies, was proposed by Kshama Sawant, the only Indian American councilwoman in the city, which is home to an estimated 75,000 Indian Americans.

Sawant, herself from a privileged caste background, has been a vocal critic of the discriminatory caste system. Sawant said the ordinance – which was approved on February 21, 2023 – would help put an end to an “invisible and unaddressed” form of discrimination in Seattle. A year ago, in January 2022, the California State University, America's largest public higher education system, also added caste to its anti-discrimination policy, allowing students, staff and faculty across its 23 campuses to report caste bias and discrimination. Influential interest groups advocating for the Hindu community in the US have opposed the Seattle decision. The Coalition of Hindus in North America, a Hindu advocacy group, has called it “nothing

but bigotry against the South Asian community by using racist, colonial tropes of caste.”

While the caste system is often conflated in Western media with the Hindu religion and India alone, that is far from the truth. As social scientists specialising in South Asian studies, we assert that the caste system neither is exclusive to the Hindu religion nor is it restricted to India and Indians.

Caste in South Asia

While the caste system originated in Hindu scriptures, it crystallised in its current form during British colonial rule and has stratified society in every South Asian religious community. In addition to India, it is present in Pakistan, Bangladesh, Nepal, Sri Lanka, Maldives and Bhutan.

Social, economic and political status in this pernicious system is tied to traditional occupations fixed by birth. Brahmins, for example, who were traditionally assigned priestly work, are at the top, and Dalits, relegated to the bottom, are forced into occupations that are considered abject in South Asia. These include janitorial work, maintaining sewage systems, skinning dead animals, and leather tanning. Strict rules of caste-based marriages maintain these boundaries firmly. Caste organises social life not only among Hindus but also in Muslim, Christian, Sikh and Buddhist communities in the region. It is an intergenerational system based on birth into a caste group. Caste identities stay even generations after someone converts out of Hinduism and into any of these faiths.

Among South Asian Christians, Anglo-Indians – of mixed descent from Indian and British parents – are parallel to Brahmins, who remain at the top of the hierarchy. Middle-level Hindu castes come next, followed by those from Indigenous backgrounds. Those who converted to Christianity from Dalit groups are placed at the bottom. In other words, the system remains unchanged. Muslims across the region are organised with the minority Ashraf communities at the top.

The Ashraf community claims noble status as the “original” Muslims in South Asia because of their descent from Central Asian, Iranian and Arab ethnic groups. The middle in this social hierarchy is composed of Ajlaf,

considered to be “low-born” communities that converted from Hindu artisanal castes.

The group at the bottom includes converts from Dalit communities who are identified with the demeaning term Arzal, which means vile or vulgar. In the Sikh community, the powerful landowning caste, Jat-Sikhs, are at the top, followed by converts from Hindu trading communities in the middle and converts from lower-caste Hindu communities, Mazhabi Sikhs, at the bottom.

While Buddhism in India is close to being casteless, its dominant versions in Sri Lanka and Nepal have caste-based hierarchies.

Caste carries over after conversion

While many of the so-called lower-caste groups converted to escape their persecution in Hinduism, their new religions did not treat them as fully equal.

South Asian Christians, Muslims, Sikhs and Buddhists with Dalit family histories continue to face prejudice from their new co-religionists. They are excluded from or experience segregation at shared places of worship and sites of burial or cremation across all these regions.

Social scientists have shown that strict caste-based rules continue to regulate social organisation and everyday interactions. Intercaste marriages are rare: for example in India, they have stagnated at about five per cent of all marriages over the past several decades. When they take place, rule-breaking individuals risk violent retribution.

While urbanisation and education have normalised everyday interactions across caste groups in shared urban spaces, entertaining lower-caste individuals in upper-caste households is still taboo in many families. A 2014 survey found one in every four Indians to be practicing untouchability, a dehumanising practice in which people from Dalit castes are not to be touched or allowed to come in contact with upper-caste individuals.

Untouchability was prohibited in India in 1950 when its egalitarian constitution came into force. However, homeownership is segregated by

caste, and religion and caste discrimination is pervasive in the rental market, where residential associations use flimsy procedural excuses for keeping lower-caste individuals out. Lower castes are expected to defer to the higher status of upper castes, refrain from expressing themselves in shared spaces and avoid displaying material affluence.

They risk being punished by socioeconomic boycotts, which could include ostracizing the Dalits or keeping them out of employment. It may even include assault or murder. In Pakistan, anti-blasphemy laws are used as a pretext for caste violence against Dalits, many of whom have converted to Christianity.

Caste and life outcomes

Studies show that caste-based identity is a major determinant of overall success in South Asia. Upper-caste individuals have better literacy and greater representation in higher education. They tend to be wealthier and dominate private-sector employment, as well as entrepreneurship.

While affirmative action programmes initiated by the British and continued in independent India have made improvements in the educational levels of lower-caste groups, employment opportunities for them have been limited. Studies also demonstrate how caste identity affects nutrition and health through purchasing power and access to health services.

Most socioeconomic elites in South Asia, regardless of religion, are affiliated with upper-caste groups, and the vast majority of the poor come from lower-caste groups.

Caste in the diaspora

Scholars have documented similar discriminatory practices in the diaspora in the UK, Australia, Canada and the African continent.

Caste has started getting recognition as a discriminatory category, especially in the US, in recent years. A 2016 survey, "Caste in the USA," the first formal documentation of caste discrimination within the US diaspora, found that

caste discrimination is pervasive across workplaces, educational institutions, places of worship and even in romantic partnerships.

In 2020, the state of California sued Cisco Systems, a technology company in the Silicon Valley, on a complaint against caste-based discrimination. Harvard University, Colby College, University of California, Davis, and Brandeis University have recognised caste as a protected status and have included it in their nondiscrimination policies.

Seattle's new ordinance may trigger similar moves across other US cities where South Asian Americans from nonelite caste backgrounds are settling down and address caste-based discrimination among other South Asian faith communities as well. For now, this ordinance will help put the spotlight on this centuries-old system that denies equality to a substantive section of the population on the basis of an oppressive ideology.

6. In affidavit in SC, Centre defends exclusion of Dalit Christians, Dalit Muslims from scheduled castes' list

The Centre has defended the exclusion of Dalit Christians and Dalit Muslims from the list of scheduled castes, saying historical data shows no backwardness or oppression was ever faced by them

The Centre has defended the exclusion of Dalit Christians and Dalit Muslims from the list of scheduled castes, saying historical data shows no backwardness or oppression was ever faced by them.

Contending that Dalit Christians and Dalit Muslims cannot claim benefits which scheduled castes are entitled to, the Ministry of Social Justice and Empowerment in an affidavit in the Supreme Court said the Constitution (Scheduled Castes) Order of 1950 does not suffer from any unconstitutionality.

The affidavit was filed in response to a plea of NGO Centre for Public Interest Litigation (CPIL) seeking extension of reservation and other benefits to people from Dalit communities who converted to Islam and Christianity.

The ministry also submitted that the identification of scheduled castes is centred around a specific social stigma that is limited to the communities identified in the Constitution (Scheduled Castes) Order, 1950.

The Constitution (Scheduled Caste) Order, 1950, "does not suffer from any unconstitutionality inasmuch as the exclusion of Christianity or Islam was due to the reason that the oppressive system of untouchability that leads to economic and social backwardness of some Hindu castes was not prevalent in Christian or Islamic societies", the affidavit said.

The Order "was based on historical data which clearly established that no such backwardness or oppression was ever faced by members of Christian or Islamic society", it said. "In fact, one of the reasons for which people from scheduled castes have been converting to religions like Islam or Christianity is so that they can come out of the oppressive system of untouchability which is not prevalent at all in Christianity or Islam," the affidavit said.

The ministry also refused to agree with the report of the Justice Ranganath Mishra Commission that recommended inclusion of Dalit Christians and Dalit Muslims in the scheduled castes list, and said it took a myopic view.

PAPER - 2

INDIAN & TRIBAL ANTHROPOLOGY

1. Centre's housing scheme for tribal groups facing hurdles due to lack of accurate data



The PM Janjati Adivasi Nyay Maha Abhiyaan (PM-JANMAN), a housing scheme targeting tribal communities, faces challenges due to the lack of accurate data on beneficiaries. The scheme, launched with ambitious targets, aims to provide housing to tribal groups but is hindered by discrepancies in population estimates and incomplete surveys.

Issues

- **Data Accuracy:** Inaccurate estimates of the tribal population, varying from 28 lakh to 44.64 lakh, pose challenges in identifying eligible beneficiaries for the housing scheme.
- **Incomplete Surveys:** State governments conducted surveys based on estimates provided by the Centre, leading to discrepancies and incomplete data on tribal populations and their locations.

Significance

- **Tribal Welfare:** The PM-JANMAN scheme is crucial for improving the living conditions of tribal communities, addressing housing needs, and reducing vulnerability.
- **Development Goals:** Providing housing to tribal groups aligns with broader development objectives, promoting inclusive growth and reducing disparities in access to basic amenities.
- **PM-JANMAN (comprising Central Sector and Centrally Sponsored Schemes)** was launched for the socio-economic welfare of PVTGs on 15th November 2023 in Khunti, Jharkhand, on the occasion of **Janjatiya Gaurav Diwas**.
- PM-JANMAN, with a **budget of approximately Rs 24,000 crore, focuses on 11 critical interventions through 9 Ministries**.
- An amount of Rs.15,000 crore will be made available to implement the Mission in the next three years under the **Development Action Plan for the Scheduled Tribes (DAPST)**.
- It is part of the Pradhan Mantri Particularly Vulnerable Tribal Groups Development Mission that finance minister Nirmala Sitharaman announced in the **Union Budget 2023-24** in February 2023.
- It is **aimed to improve socio-economic conditions of the PVTGs** by saturating PVTG households and habitations with basic facilities **such as safe housing, clean drinking water and sanitation, electricity, road and telecom connectivity etc.**
- India has a **Scheduled Tribes population of 10.45 crore as per 2011 census**, out of which 75 communities located in 18 States and the Union Territory of Andaman and Nicobar Islands have been categorized as PVTGs.

2. IRULA TRIBE



- **Vadivel Gopal and Masi Sadaiyan of the Irula community received Padma Shri at a civil investiture ceremony at Rashtrapati Bhavan.**
 - **Both are expert snake catchers** and are members of the Irula Snake Catchers' Industrial Cooperative Society, one of the major anti-snake venom (ASV) producers in India.
- In January 2017, Masi Sadaiyan and Vadivel Gopal were invited by the State of Florida (USA) to track down and capture invasive Burmese pythons. They captured 14 pythons in less than two weeks

Irula Snake Catchers' Industrial Cooperative Society

- In 1978, Romulus Whitaker (wildlife conservationist) established a venom centre in the form of a cooperative society with the help of a group of Irulas people.

- His vision was **to turn Irulas's traditional skills into sustainable employment-generating opportunities for the community through a cooperative society.**
- The cooperative started with 11 Irulas members, and now has 350 members, including 160 women.
- **Irulas people know the places where snakes hide, from experience and instinct and can find snakes by their track, smell and droppings.**
 - They treat snake bites with pachai elai marundhu, a herbal medicine, and avoid going to the hospital in most cases.

Working Model of the Society:

- People from the Irulas community capture snakes from farmland, scrub forests, houses and lakes and bring them to society.
 - The snakes are weighed, measured and checked for injuries by the cooperative members.
- **Only snakes that pass the health check are used for venom extraction.**
 - Venom extraction exercises are done once a week, and after 28 days the snakes are released back into forests.
- After the extraction, the venom is then powdered and stored at a specific temperature to be sold to pharmaceutical companies.
- The society members are allowed by the government to catch snakes only between August and March.

Irulas Tribe:

- **Irula tribe** is a Dravidian ethnic group settling in the state of Tamil Nadu, Kerala and Karnataka.
 - In the Tamil language, the **Irula means "people of darkness."** This could refer to their dark-coloured skin or since all important events of the tribe traditionally took place in the darkness/night.
- A study conducted by Yelmen et al (2019) found that the Irula people were the closest likely proxy for the indigenous Ancient Ancestral South Indian, one of the presumed founder and autochthonous original Indian populations.
 - The DNA analysis (2018) of a skeleton from the Indus Valley Civilisation found in Rakhigarhi showed a greater association

with the Irula people than any other modern ethnic group in India.

- **According to the Census 2011, the tribe population is around 200,000;**
 - 189,621 in Tamil Nadu
 - 23,721 in Kerala
 - 10,259 in Karnataka.
- The people of the Irula tribe are called Irular and they speak the Irula language, which belongs to the Dravidian family.
 - They are categorised under scheduled tribes.
- **Irular believes in life after death.**
- In general, the Irula are Hindu, but many of them have retained their own tribal beliefs that revolve around the spirit world.
- **Traditionally, the main occupation of the Irulas has been snake, rat-catching and honey collection.**
 - They also work as labourers in the fields of the landlords during the sowing and harvesting seasons or in the rice mills.
 - Fishing and cattle farming is also major occupation.
- Rats destroy a quarter of the grain grown on Tamil Nadu-area farms annually. To combat this pest, Irula men use a traditional earthen pot fumigation method.
- Their knowledge and use of herbal medicines, tracking and digging skills, and unusual diet (which includes rats) have been written about, filmed, studied and lauded.

Some unique Customs of the Irula Tribe:

- Generally, marriage is fixed for girls within the age limit of 12 -18 whereas boys' age is from 14-24. People from the same clan within the Irular tribe do not intermarry.
- Marriages are fixed within the family by the parents. **Bride's prize has to be given to the girl's house in the form of cash or cattle.**
 - Marriages that do not have the acknowledgement of a local panchayat are considered invalid.
- During childbirth, a tent is erected near the pregnant woman's house. When the child is born nobody will go out of the tent and none will be allowed to enter the tent for seven days.

- On the 7th day, the child will be named during a big ceremony. The name will be the name of a grandfather or grandmother.
- For three months relatives other than the immediate parents, should not touch the child. During this period the mother will not do any work.

Tribal in India:

- The Term “Tribal” literally means ‘original inhabitants’ - are communities who lived and often continue to live, in close association with forests. They are very old Communities, being among the oldest inhabitants of the Sub-Continent.
- **They are not a homogeneous population:** there are over 500 different tribal groups in India.
- Their societies are also the most distinctive because there is often very little hierarchy among them. This makes them radically different from communities organised around principles of jati-varna (caste) or those that were ruled by kings.
- **They practise a range of tribal religions that are different from Islam, Hinduism and Christianity.** These often involve the worship of ancestors, village and nature spirits, the last associated with and residing in various sites in the landscape - ‘mountain spirits’, ‘river spirits’, ‘animal spirits’, etc.
- They have their languages (most of them radically different from and possibly as old as Sanskrit), which have often deeply influenced the formation of ‘mainstream’ Indian languages, like Bengali.
 - **Santhali has the largest number of speakers** and has a significant body of publications including magazines on the internet.
- **In terms of language, tribes are Categorized into 4 Categories:**
 - Indo-Aryan
 - Dravidian
 - Austric
 - Tibeto-Burman
- In terms of size, the biggest tribes are Gonds, Bhils, Santhals, Oraons, Minas, Bodos and Mundas.

- **The total population of tribes amounts to about 8.6% of the population of India.**
-
- Based on livelihood, tribes Can be Categorized into Fishermen, food gatherers and hunters, Shifting Cultivators, Peasants, Plantation and industrial workers.
- Tribal Society is a more egalitarian and kinship-based mode of Social organization.
- **Tribals were not always the oppressed groups they are now; there were Several Gond kingdoms in Central India.**
 - Many of the So-Called Rajput kingdoms of Central and western India emerged through a Process of Stratification among Adivasi Communities themselves.
 - Adivasis often exercised dominance over the Plains People through their Capacity to raid them, and through their Services as local militias.
 - They also occupied a Special trade niche, trading forest Produce, Salt and elephants.
 - Capitalist economics to exploit forest resources and minerals to recruit cheap labour has brought tribal Societies into Contact with mainstream Society a long time ago.
 - They were losing their land to non-tribal immigrant Settlers, and their access to forests because of the government policy of reservation of forests and the introduction of mining operations.

Challenges faced by Tribals:

- Land and forests were taken away from Tribal Societies in the name of development.
- **Development involved the building of large dams, factories and mines.** Because the tribal areas were located in mineral-rich and forest Covered Parts of the Country, tribals have paid a huge Price for the development of the rest of Indian Society. This kind of development has benefited the mainstream at the expense of the tribes.
- Forests Started to be systematically exploited in British times and the trend continued after Independence. The Coming of Private Property in the land has also adversely affected tribals, whose Community-based

forms of Collective ownership were placed at a disadvantage in the new System.

- Many tribal Concentration regions and States have been experiencing the Problem of heavy in-migration of non-tribals. This threatens tribal Communities and Cultures, besides accelerating the Process of exploitation of tribals.
 - In Tripura, the tribal Share of its Population halved within a Single decade, reducing them to a minority. Similar Pressure is being felt by Arunachal Pradesh.
- **Many Tribals in the North-East States have been living for decades under Special laws** that limit the Civil liberties of Citizens, States have been declared as 'disturbed areas'.
- **The vicious Circle of armed rebellions Provoking State repression which in turn fuels further rebellions has damaged the economy, Culture and Society of the North-eastern State.**

Schemes for the development of Tribal:

- **The Pre and Post Matric schemes** are demand-based schemes and every ST student whose family income is up to Rs 2.5 lakhs is entitled to a scholarship for pursuing education from class IX to Post Doctorate across India.
 - The states send the proposal for the estimated expenditure during the financial year based on the expenditure incurred in previous years and advance up to 50% of the Central share is released to the States.
 - After the State has disbursed the scholarship to the students and has submitted certificates, the balance amount is released to the State provided the State has contributed its share.
- **Pradhan Mantri Adi Adarsh Gram Yojna:**
 - Comprehensive development of 36,428 villages will be undertaken to develop these villages as Adarsh Gram, under 'Pradhan Mantri Aadi Adarsh Gram Yojana'.
 - **These villages have a tribal population of more than 500 and are 50% tribal.**
- **Pradhan Mantri Janjatiya Vikas Mission**

- The Mission seeks to achieve livelihood-driven tribal development in the next five years through the formation of Van Dhan groups that have been organized into Vandhan Kendras.
- New haats bazaar and warehouses will be developed in the next 5 years as part of *“Atmanirbhar Bharat Abhyan”*.
- TRIFED would be the nodal agency for implementing the scheme. The products produced will be marketed through Tribe India Stores.
- **Venture Capital Fund for STs**
 - An amount of Rs. 50 cr. has been sanctioned for the new scheme of ‘Venture Capital Fund for Scheduled Tribes’ (VCF-ST), which is aimed at promoting Entrepreneurship among the STs.
 - The VCF-ST scheme would be a social sector initiative to promote ST entrepreneurship and to support and incubate the start-up ideas of ST youth.
- **Central Sector Scholarship Scheme for ST students** was introduced in the academic year 2007-08 to encourage meritorious ST students for pursuing studies at the Degree and Postgraduate level in any of the Institutes identified by the Ministry of Tribal Affairs for the purpose.
- **Vocational Training Centers in Tribal Areas**
 - The main aim of this scheme is to upgrade the skills of the tribal youth in various traditional/ modern vocations depending upon their educational qualification, present economic trends and the market potential, which would enable them to gain suitable employment or enable them to become self-employed.

3. Tribal Honey Hunters Save Bees & Improve Our Food Security



Even as modern science grapples with the rapidly declining bee population, we could look back and take a lesson on sustainability from the ancient culture of the adivasis (the first people) of the Nilgiris.

Covering over three states of Kerala, Tamil Nadu and Karnataka, the Nilgiri Biosphere Reserve is home to over eighteen ethnic groups. Of them, Kattunaickens, Kurumbas, Sholigas and Irulas are known to be the primary honey hunter tribes. Traditionally, these tribes hunt for honey on the cliffs of the Nilgiris (translates as blue mountains), atop high trees, inside tree cavities and also in underground hives (*puthu thaen* or burrow honey).

In recent times, with reduced forest cover, climate change and government restrictions, it has become increasingly difficult for these tribes to collect wild honey.

Even as we begin the honey trail for our story, early rains play spoilsport and the locals were worried that it would drive off the bees. Such unpredictable rains are a recent phenomenon in the Nilgiris, which has had a direct impact

on honey availability and hence the honey bees and the honey hunters. After months of follow up, we finally meet up with Masanan, an Irula tribal from Masinagudi in Nilgiris district, who belongs to a family of honey gatherers.

He said, “When I used to go with my father for gathering honey, there would be 15 combs in a cliff. Now there are hardly six.”



Harvesting honey without cutting the brood. Photo from Keystone Foundation.

He tells us that their community treats the bees as sacred beings and they hold prayers before they leave for harvesting the honey. Even as we walked miles across the outskirts of the forest, Masanan knew the location of the bee hives, be it atop the trees, or in cavities or cliffs, like the back of his hand. He points to how the bees always prefer a place near a water source and also about how the flowering season impacts the quality of honey.

“We always wait till April to harvest honey, as it gives a better survival rate for the larvae and mature honey (with less water content) for us.

Traditionally, we do not use destructive methods like crushing the hives or burning it. Our elders use the herbs in the forest to create smoke that drives away the bees. We then harvest only what is necessary for us, leaving enough for the bees to sustain. For instance, if there are few hives in the cliff, we leave 60 percent untouched for the bees come back to the same place every year," added Masanan.

Sasi, a Kattunaicker tribal member from the neighbouring Coonoor agrees that this practice is common amongst their honey gatherers too.

Masanan smiled, "We live and let live."



Justin Raj, a beekeeping expert with Keystone Foundation, training the community members to continue their sustainable methods of harvesting honey. Photo from Keystone Foundation.

Keeping the buzz alive

We stood there watching in amazement as hundreds of bees buzzed around him and he did not swat even one, "Normally, one or two bees will sting us, but if he hit them, hundreds will swarm us recognizing the smell of the dead bee. So, while you watch, make sure you do not kill even a single bee," he warns, taking out the honey, undeterred by the (literal) buzz around him.

But not every tradition has survived time. Masanan, for instance, uses his *beedi* (native cigar) to smoke out the beehive we found. He was able to

save the brood of the hive in the tree cavity, but in the tree branches, it sometimes becomes impossible to cut the honey without striking the brood. “Unlike *petti then* (box honey) apiculture, we cannot always tap just the honey,” he said.

Justin Raj, a beekeeping expert with conservation NGO Keystone Foundation, tells us that most tribes in Nilgiris traditionally follow a sustainable method of honey harvesting. “Our job is to ensure that they stick to these sustainable and clean practices through training workshops,” he said. “First, we request them not to touch or attack the queen cell. And as is their traditional practice, if they find seven combs, we ask them to harvest only three. We also request them to take out just the honey part (wherever possible) and leave the brood with the larvae intact. Lastly, we ask them to wait for over six months to gather mature honey with less water content and less damage to the bees.”

Be it apiculture or wild honey harvesting, Keystone Foundation insists that the honey gatherers they work with follow sustainable honey harvesting practices and their products are given a better market price for following sustainable methods.

Bharath Kumar Merugu, Project Lead, Just Change works with over 175 Kattunayakar honey gatherers through a tribal union called ‘Thenkootam’ (*then* - honey, *kootam* - crowd) under the umbrella of Adivasi Munetra Sangam. “We think it is important to support sustainable non-timber produce like honey and coffee.

This will ensure that our tribal people turn protectors of the forest even while guaranteeing them a reliable livelihood option. The price of the honey is fixed by the tribal union themselves, we merely help them reach a better market.”

Ecologist Godwin Vasanth Bosco agrees that it is crucial to include the indigenous tribes instead of keeping them out of the forests and even perhaps use their traditional expertise to conserve the wild bees in the Nilgiris. He opines that it is equally important to educate farmers in the biosphere to stay off harmful pesticides that could directly impact the bee population. Several villagers of the Athakarai Village in Nilgiris district we spoke to also

confirmed that swarms of bees die after visiting pesticide-ridden jasmine farms in the region.

In India, conservation has primarily focused on introducing the European species *Apis mellifera*, renowned for easy domestication and high yield of honey. But studies show that this has had an adverse impact on the native rock (*A. dorsata*) and hive bees (*A. cerana indica*) as they compete for food. This loss of bee diversity could directly impact the plants dependent on it for pollination.

Hariprasad, Professor – Agri-entomology, Annamalai University informs us that the European bee, which is the most domesticated in the world is also easily disease-prone. He says, “Of the five prominent bee species in India, the rock bees or *A. dorsata* species are the major honey yielders. But they cannot be domesticated. The Dammer bee (*Melipona irridipennis*) on the other hand is good for cross-pollination even though the honey yield is less.” It is therefore important to find the middle ground between sustainability and utility.

Hariprasad suggests that improving the local food source by making it pesticide-free could play a major role in conserving bees and biodiversity of the region. He also suggests that initiatives like providing mountaineering kits for personal safety and training on sustainable production of value-added products from beeswax and pollen could help the tribals gain more profit and enable them to become part of the solution.

Mudhan, an Irula tribe member from Masinagudi suggests it will be good if traditional honey gatherers like them are given training in apiculture, where they could breed indigenous bees throughout the year.

He added, “Irrespective of the jobs we do, in the summer, we would always want to go back to the cliffs. Our lives and culture are always intertwined with these bees.”

4. Ladakh and the Sixth Schedule of the Constitution



- A shutdown and protest rally in Ladakh recently demanded statehood for the newly created Union Territory (UT) and its inclusion in the Sixth Schedule of the Constitution.
- This highlights a broader issue concerning governance and autonomy in the region.

Centre's Offer to Ladakh Representatives

- **Article 371-like Protections:** MHA offered to extend Article 371-like protections to Ladakh, addressing concerns raised by the Leh Apex Body (ABL) and the Kargil Democratic Alliance (KDA).
- **Exclusion from Sixth Schedule:** While acknowledging concerns, the government opts against including Ladakh in the Sixth Schedule, indicating a different approach to address regional issues.

Background: Ladakh's Governance Post Article 370 Repeal

- **Recognition as Union Territory:** Post the repeal of Article 370, Ladakh was recognized as a separate Union Territory "without legislature," akin to UTs like New Delhi and Pondicherry.

- **Demand for Sixth Schedule Inclusion:** Organizations like ABL and KDA have advocated for Ladakh's inclusion under the Sixth Schedule, seeking greater autonomy in governance.

What is the Sixth Schedule?

- **Article 244** in **Part X** of the Constitution outlines a special system of administration for **designated 'scheduled areas'** and **'tribal areas.'**
- The **Fifth Schedule** deals with scheduled areas and tribes in states **except** Assam, Meghalaya, Tripura, and Mizoram (ATM2).
- The Sixth Schedule focuses on tribal areas **in these four northeastern states.**

Salient Features of Sixth Schedule:

(1) Autonomous Districts

- Tribal areas are constituted as **autonomous districts** within the executive authority of the state.
- The **governor holds powers to organize and re-organize** these districts, including boundary changes and division into autonomous regions.

(2) District and Regional Councils:

- Each district council **consists of 30 members**, including **nominated and elected**
- **Regional councils** also exist within autonomous regions.
- These councils **administer areas** under their jurisdiction, making laws on specific matters **with the governor's assent.**
- They can **establish village councils or courts** for dispute resolution, with specified jurisdiction over appeals.
- District councils manage **various facilities and services** within their areas, including education and healthcare.
- They also have the **authority to impose taxes and regulate** certain activities.

(3) Laws Exemptions and Modifications:

- Acts of Parliament or state legislatures **may not apply directly** or may apply with modifications.
- The **president or governor** holds the power of direction in this regard, depending on the region.

(4) Governor's Authority:

- The **governor may appoint a commission** to examine and report on matters concerning autonomous districts or regions.
- He/she also has the **authority to dissolve a district or regional council** based on commission recommendations.

Tribal Areas under Sixth Schedule

- **Assam:** North Cachar Hills District, Karbi Anglong District, Bodoland Territorial Areas District.
- **Meghalaya:** Khasi Hills District, Jaintia Hills District, Garo Hills District.
- **Tripura:** Tripura Tribal Areas District.
- **Mizoram:** Chakma District, Mara District, Lai District.

Reasons for such Demands in Ladakh

- **Cultural Autonomy:** Tribes in Assam, Meghalaya, Tripura, and Mizoram maintain distinct cultures, customs, and civilizations. Unlike tribes in other parts of India, they have not assimilated much with the majority population.
- **Meeting tribal aspiration:** The Parliamentary standing committee recommended including of Ladakh in the Sixth Schedule because its tribal communities account for 79.61% of its total population.
- **Autonomy and self-governance:** Extending the Sixth Schedule to Ladakh could provide greater autonomy and self-governance to the local tribal communities.
- **Cultural preservation:** It could also help to protect the unique cultural identity of the local communities and preserve their traditional practices and customs.

Challenges posed by this demand

- **Fragmentation:** The demand to extend the Sixth Schedule to Ladakh has faced some opposition from certain quarters, who argue that it could lead to further fragmentation of the region and create new administrative challenges.
- **Losing political capital:** There are also concerns over the potential impact of the demand on the political and administrative structure of the region.

Conclusion

- While stopping short of Sixth Schedule inclusion, MHA's move demonstrates a commitment to balancing local autonomy with national governance priorities.
- If implemented, it would mark the first instance of special provisions being introduced for a Union Territory, potentially setting a precedent for future governance arrangements in such regions.

5. A tribe in the Western Ghats in need of a lifeline



Makuta Village and the Phani Yerava Tribe

- Located in the Western Ghats of Karnataka, Makuta village is home to the Phani Yerava tribe within the Makuta Aranya Valaya.
- The tribe successfully claimed 135 acres of forest land under the Forest Rights Act, facilitated by local individuals and authorities.

Shift in Livelihood Patterns:

- Despite acquiring forest rights, the tribe's enthusiasm for forest dependence has diminished over time.
- Gathering minor forest produce has become less appealing due to market volatility and exploitation by middlemen.
- Many tribe members now prefer wage labour, particularly in nearby areas like Kasaragod, Kerala, where they are comfortable speaking Malayalam.

Challenges and Issues:

- The tribe faces a significant challenge of alcohol addiction, affecting individuals of all ages, including adolescents.
- Alcohol abuse has led to a decline in school attendance and overall community well-being.
- Important documents and government rights are entrusted to non-tribal members due to the community's uninformed state and vulnerability.

Call for Attention and Action:

- NGOs, government officials, and tribal leaders express concern over the lack of policy attention to social issues like addiction.
- There's a plea for the government to address such challenges and prioritize the well-being of marginalized tribal communities.
- Addressing these social issues is crucial for effectively conserving forest dwellers' livelihoods and well-being.

6. Tripartite agreement with Tipra Motha



The Central government recently signed a tripartite agreement with **Tipra Motha and Tripura government** to solve long standing issues of **indigenous population**.

Tripartite Agreement:

- A **tripartite agreement with Tipra Motha or Indigenous Progressive Regional Alliance (TIPRA)** was signed to solve the problems of the state's indigenous people.
- This enabled the government to **correct past wrongs, and accept the present reality** to proceed towards a stable state with an **autonomous body**.
- The peace pact with the insurgent group **National Liberation Front of Tripura (NLFT)** was signed earlier as a counter-extremist measure.
- Tipra Motha head was on a **'fast-unto-death'** to demand a permanent solution to the problems of the indigenous people in Tripura.
- But **negotiations** with the Central Government and Tripura State government, led to an agreement related to their interests.

- It **included matters of history, land and political rights, economic development, identity, culture, and language.**
- A **Joint working group/ committee** will be constituted for implementation of mutually agreed points on issues in a time-bound manner.
- It also included key demands of the **Greater Tipraland** by indigenous communities.
- All stakeholders **shall refrain from any form of protest/ agitation**, post the signing of the agreement.
- Tipra Motha demanded a separate state for Tripura's tribals and include those living outside the **Tripura Tribal Areas Autonomous District Council (TTAADC) area.**
 - **Autonomous District Council (ADC)** are administrative divisions in Assam, Tripura, Meghalaya and Mizoram under the **Sixth Schedule of the Constitution.**
- **Increase powers of the TTAADC** like direct funding from the Centre, its police force, and share of revenue from gas exploration in the state.
- **Roman script** to be declared as the official script for the indigenous **Kokborok language.**

7. ISRO to Provide Internet Services in 80 Remote Tribal Villages

- The Ministry of Tribal Affairs is planning to collaborate with ISRO to deploy V-SAT stations on a pilot basis for around 80 tribal villages.
- About VSAT (Meaning, Working, Advantages, Disadvantages, etc.)
- News Summary (MoTA's Collaboration with ISRO)

About Very Small Aperture Terminal (VSAT):

- A very small aperture terminal is a **two-way ground station that transmits and receives data from satellites.**
- A VSAT is less than three meters tall and is capable of both narrow and broadband data to satellites in orbit in real-time.

- The data can then be redirected to other remote terminals or hubs around the planet.

How a VSAT Works?

- VSAT networks have a number of commercial applications, including, perhaps most notably, **Enterprise Resource Planning (ERP)**.
 - For example, the use of VSAT to track inventory was one of the many innovations **Walmart** (US-based retail store) pioneered in retail to effectively manage its vast inventory in real-time and reduce delivery costs between the warehouse and stores.
 - Combined with the hub system of inventory storage, VSAT allowed Walmart to stock its stores more precisely and reduce how many times a product had to move between locations before being sold.
- Other manufacturers use VSAT to relay orders, check production figures in real-time as well as other functions that are otherwise handled over a wired network.
- The **National Stock Exchange (NSE)** in India has one of the largest VSAT networks in the world and offers it as one of its connectivity options.
 - VSAT provided the NSE with a way to offer access in areas where wired options are limited.
- With the exception of the occasional sun outage due to solar radiation distorting signals from the satellite, the VSAT network has held up.

Advantages/Disadvantages of VSAT:

- **Advantages:**
 - VSAT networks have a big advantage when it comes to deployment.
 - Because the ground station is communicating with satellites, there is less infrastructure required to service remote locations.
 - This has made VSAT networks an ideal choice for providing connectivity to remote work sites, such as exploratory drilling sites that need to relay daily drill logs back to headquarters.

- VSAT is also independent of local telecommunications networks, making it an ideal system to back up wired systems and reduce business recovery risk.
- If the wired network goes down, a business can still go on using the VSAT network.
- **Disadvantages:**
 - However, VSAT does have limitations.
 - The most obvious is **latency**, as it takes time for information to reach the dish and the station due to one part of the system being way up in geosynchronous orbit above the earth.
 - In other words, protocols that require a lot of back-and-forth communication rather than one-way data transfer experience lag.
 - The signal quality can also be affected by the weather and other buildings getting in the way.

News Summary:

- The Union Ministry for Tribal Affairs (MoTA) recently launched ground-breaking partnerships for tribal development.
- The Ministry has collaborated with Indian Space Research Organization (ISRO), Indian Institute of Science (IISc) Bengaluru, All India Institute of Medical Sciences (AIIMS) Delhi, Indian Institute of Management (IIM) Calcutta, and Indian Institute of Technology (IIT) Delhi.

Collaboration with ISRO to Establish V-SAT Stations:

- A gap analysis conducted by the Ministry of Tribal Affairs identified approximately 18,000 tribal majority villages with challenging accessibility due to remote locations and terrain.
- Inadequate mobile and internet connectivity in these areas hinders access to basic services.
- ISRO's satellite-based (V-SAT) solutions can significantly address these connectivity challenges.
 - V-SAT stations can be static or mounted on vehicles.
- MoTA is partnering with ISRO to establish V-SAT stations at 80 Villages in 4 States on a pilot basis.
 - These 4 States are **Jharkhand, Madhya Pradesh, Odisha, and Maharashtra.**

- These stations will **offer Wi-Fi capacity of 100 Mbps**, expandable to another 100 Mbps with boosters, enhancing connectivity and access to essential services for tribal communities.
- This pilot project would be monitored so that it could be scaled up to other similar tribal villages in other States as well, adding the goal is also to help with e-governance in these remote areas.

8. Eradicating Sickle Cell Disease; Securing the Future of India's Tribal Communities

- Recently, the Prime Minister launched **National Sickle Cell Anaemia Eradication Mission (NSCAEM)**, which aims to eliminate the disease by 2047.
- The disease poses a significant threat to the future and existence of India's indigenous populations, and it is imperative to prevent the spread of this disease in a timely manner.

Sickle Cell Disease (SCD)

- First discovered by a physician named **James Herrick**, Sickle cell anaemia is one of a group of **inherited disorders commonly found among tribal communities**.
- It is a **genetic disorder** in which a person's red blood cells become distorted and take on a sickle-like shape.
- Sickle cell disease exists in two forms within the human body.
 - One is the Sickle Cell trait, in which the individual does not exhibit any disease or symptoms, and lives a normal life.
 - The second form is characterised by the presence of symptoms related to SCD.

How does SCD affect a person?

- A round red blood cell can move easily through blood vessels because of its shape but sickle red blood cells end up **slowing and even blocking the blood flow**.

- These obstructions and shortages **may cause chronic anaemia, pain, fatigue, acute chest syndrome, stroke, and a host of other serious health complications.**

Prevalence of SCD in India

- **India is the second-worst affected country** in terms of predicted births with SCA – i.e., chances of being born with the condition.
- In India, around **18 million people have sickle cell traits** and 1.4 million patients have SCD.
- It is widespread among the tribal population in India where about **1 in 86 births among STs have SCD.**
- A few states in India have a significantly higher SCD prevalence. These include:
 - Chhattisgarh, West Bengal, UP, Maharashtra, MP, Jharkhand, Gujarat, Odisha, Kerala, and Rajasthan.
 - Collectively, these states are referred to as the **sickle cell belt.**

Treatment Methods

- **Prevention**
 - The first approach focuses on prevention, ensuring that new cases are not born.
 - If two individuals with Sickle Cell trait marry each other, there is a high probability that their child will have SCD.
 - **By screening individuals for Sickle Cell trait before marriage,** the spread of the disease can be prevented.
- **By Providing Healthcare Facilities**
 - The second approach involves managing the **treatment and providing adequate healthcare facilities** for individuals already affected by the disease.
 - A comprehensive ecosystem is being developed to address these aspects and ensure access to proper healthcare and management for SCA patients.

Steps Taken by India to Tackle SCD

- The Ministry of Tribal Affairs (MoTA) has launched the **Sickle Cell Disease Support Corner** to bridge the gap between patients and health care services in tribal areas.
- The Portal provides a **web-based patient powered registration system** which will collate all information related to SCD among tribal people in India.
- The **National Council on Sickle Cell Disease** has also been constituted for timely and effective action.

National Sickle Cell Anaemia Eradication Mission (NSCAEM)

- Announced in the **Union Budget 2023**, the mission aims to address the pressing health challenges posed by SCD, particularly among the tribal population.
- Through this mission, **the government aims to eradicate sickle cell anaemia from India in a mission mode by 2047.**
- A web portal has been created using digital technology to track and maintain a complete record of sickle cell patients.

Objectives/Features of NSCAEM

- **Extensive Screening**
 - The Ministry of Health, in collaboration with the MoTA and the states, has formulated a plan **to screen approximately 70 million individuals** aged 0-40 years belonging to tribal and other groups residing in nearly 200 districts of 17 states within the next few years.
 - After screening, **individuals will be provided with smart cards in their local language**, enabling prospective partners to easily determine whether their future children will be affected by SCD or not.
- **To Establish Monitoring Mechanisms**
 - Monitoring mechanisms will be established at various levels to ensure participation and bring awareness on a large scale.
 - Individuals identified with the disease through screening will **undergo regular testing, receive treatment and medication, vaccinations** for other diseases, get dietary support, and have access to timely counselling services.

- **Extending Ayushman Bharat Scheme**
 - Through the Ayushman Bharat scheme, the country has established a network of 1.6 lakh Health and Wellness Centres since 2018, which has played a crucial role in combating epidemics like Covid19.
 - These centres will also play a **significant role in eradicating SCD** along with other diseases.
 - These centres have trained healthcare workers who will provide better treatment for sickle cell patients.
- Also, the government has allocated a **sufficient budget, utilised advanced technology, provided training to healthcare workers, ensured necessary infrastructure**, and made efforts in social awareness and participation to combat this disease.

Conclusion

- India's tribal population, which constitutes 8.6 per cent of India's total population and **approximately 706 different tribal communities**, is an integral part of the country's rich cultural heritage.
- This mission will pave the way for the elimination of SCA by the year 2047, ensuring the preservation of India's tribal population, which has kept the country's heritage alive.

9. The fire-fighting children of the Khasi Hills and the decline of traditional farming in north-east India

Topic in syllabus : 6.3 Developmental projects and their impact on tribal displacement and problems of rehabilitation. Development of forest policy and tribals.



In North-east India, children of the Khasi Hills (Meghalaya) learn slash and burn cultivation, an intergenerational yet controversial indigenous practice

On a wintry February evening, along a narrow road leading to a village nestled in the East Khasi Hills in India's north-east, some children are playfully running around with branches of dry trees.

Smoke hangs in the cold air. Around another winding turn on the road, a fire in the forest comes into sight. A local farmer is burning the undergrowth of the land he owns, employing the traditional slash-and-burn cultivation method. This method, also known as swidden agriculture, is referred to locally as *jhum* cultivation and has been prevalent across South and South-East Asia for centuries.

The dry winter months of January, February and March sees scores of such fires crackling their way through forests, across all states of north-east India.

This fire-fallow farming method helps fix potash in the soil, thereby increasing its fertility. As I stop to watch the fire spread through the forest undergrowth - a spectacular sight - the children come and join me. Only later do I realise that they were not just playing around: they were there as fire-fighters.

I asked the farmer about his land. He explained that he plans to grow pineapples after the soil is prepared. The pineapples of Meghalaya are one of the sweetest and juiciest in northeast India. This forest land lies along an arterial road connecting villages near the border with Bangladesh.

Livelihoods in these villages are sustained by farming privately owned plots of land or community-owned forests adjoining the village. The major crops are betel nuts and leaves, pineapple, jackfruit, oranges, bay leaves, bamboo, tapioca and honey.

As the fire quickly spread through the forest, the farmer called upon the children to begin their fire-fighting activities. The goal is not to allow the fire to spread to the adjoining plot of land. The children get busy brandishing the branches they had been playing with at the edge of the plot. They rush into small nooks and corners to effectively contain the fire and put it out.

The fire controlled, the land is spread with ash and dotted with embers emanating smoke. Not too dangerous an activity for children to perform? I ask the farmer. He shrugs, saying that it is normal. The children need to learn the ways of the forest, of preparing the land for cultivation. They need to know how to conserve water in the dry season and deal with turbulent streams in the monsoon, manage fire and be aware of its implications and assess wind directions from an early age.

He explains that his community, the War-Khasi, a sub-tribe of the Khasi, has lived off the land for time immemorial.

Their traditional knowledge systems and means of farming have to be passed on to the next generation. The children are experts at their task and seem to be enjoying the fire-fighting.

The Indian government opposes slash-and-burn cultivation, citing environmental degradation.

Central government agencies and the state government departments concerned with agriculture have been waging a war against such practices. International agencies such as the United Nations Development Programme (UNDP) and the International Fund for Agricultural Development (IFAD) are pushing local governments to regulate the practice.

Pilot projects have been initiated to counsel farmers to alternate management of farming practices, for example using conservation agriculture in neighbouring Nagaland.

But when I ask about the government's policy, the farmer points out that this is the only method he knows, and that it has stood the test of time.

In 2009, Yale anthropologist and South-East Asian specialist James Scott argued that the "art of not being governed", has been integral to the South-East Asian upland communities for centuries. Scott wrote that such communities, like those in north-east India, had long managed to remain "ungoverned", avoid taxes and escape slavery and indentured labour conditions.

Under this system, *jhum* was one of the preferred mechanisms to keep people moving from one part of their hills to another. This allowed such hill communities to skirt land tenure systems and effectively kept governance and the state at bay.

In the present day, however, communities do not move as much, and the intervening cycles of cultivating the same plot of land has become shorter. The traditional practice of slash and burn continues to be employed, even if not many crops are planted in the same plot of land.

In this instance, the farmer explains that he will grow mostly pineapples, which will be interspersed with betel nut, jackfruit and bay leaf trees. There will be broom grass as well in his land, which he does not need to grow, and which is an intensely invasive species. He laments that it consumes a lot of water and degrades the land faster, but is a very lucrative cash crop in the region, used to make brooms.

Slowly but surely, because of a rise in the demands and pressures of the market economy and greater market connectivity, monoculture – only growing one crop – has become the norm on many plots of land, badly affecting biodiversity.

Elsewhere in north-east India, the state of Mizoram has seen the slow and steady march of oil palm plantations. The state government supports such programmes under its New Land Use Policy.

Kolasib in north Mizoram was declared an “oil palm district” in 2014. Monocultures such as rubber and other cash crops have been promoted in the hill areas by various land use schemes of the government over the past decade.

This will have a direct impact on small hill communities and local food diversity and sustainability. It is important to assess the impact of the loss of slash-and-burn method of cultivation on indigenous cultures, livelihoods and on the larger environment.

James Scott points out that swidden cultivation is on the decline across South and South-East Asia. However, we need to examine the stories of the existence of such fire-fallow methods. Can the slash-and-burn methods continue to exist and prosper, and under what conditions? What would the future hold for such farm practices? The clash between traditional knowledge systems and modern land governance systems could prevent the sharing of knowledge between generations, and the symbiotic link that locals have with their ecology and environment.

A community-based understanding of ecology and environment is needed to bring environmental politics and developmental debates in north-east India back to the people. For now, fires continue to rage among competing development models over what constitutes long-term sustainability.

10. An Indian Adivasi community is divided by scripts

Topic in syllabus: 7.2 Social change and contemporary tribal societies: Impact of modern democratic institutions, development programmes and welfare measures on tribals and weaker sections.



Santali is one of India's many Adivasi languages. Today, seven different alphabets are used to write in it. Some argue that this great variety does not help the community's development.

Script is important for the sustainability and development of a language. In the long-term, writing requires a codified grammar, precise definitions of what words mean and standardised spelling. Without those rules, texts are hard to read. They become established as a literary tradition evolves. At the same time, that literacy tradition helps to define the values and norms of the people whose mother tongue this language is. Writing thus shapes the identity of the community concerned. All of these trends are reinforced if and when a formal education system uses a written language.

For us Santals, however, the debate on what alphabet to use has become divisive. We have too many options for writing in our language.

Among South Asian Adivasis, we are the largest homogenous group. More than 10 million people belong to Santal tribes in India's eastern states as well as in Bangladesh and Nepal. Our tribes are outside the Hindu caste system and have been marginalised historically.

Santali, for example, has survived and evolved over the millennia in oral tradition. It is an Austro-Asiatic language that is related to Vietnamese and

Khmer, but not to the Indo-European languages prevalent in our part of South Asia.

In the 1890s, Christian missionaries found it helpful to write in Santali. They used Roman (Latin) letters. This alphabet, of course, has been used in many parts of Europe since the days of the Roman Empire. The missionaries wrote down folktales in Santali and documented traditional medicine as practiced by our community. They codified the grammar of the language and compiled dictionaries. Moreover, they designed reading primers, especially in order to teach Santal children.

The seventh alphabet

Education began to spread among Santals, and was not only driven by Christian missionaries. Typically, people opted for the scripts that were predominant in the region. Where most people speak Bengali, Santals used the Bengali alphabet. Where Hindi or Nepali are more common, they opted for Devanagari, which is related to, but differs from the Bengali alphabet. Where Oriya is the lingua franca, however, that language's script was chosen, which is entirely different.

The sad truth is that Santali language and literature started to develop in six different scripts. To some extent, those alphabets were modified to better suit our language, but none of them accurately reflects Santali phonemes. The more depressing problem, however, is that Santal writing in different alphabets does very little to unite our community across the regions. It neither helps us communicate among one another nor does it foster a stronger sense of self-confidence.

This pattern persists however. The main reason is that it makes sense for a minority community to use the regionally prevalent script. In West Bengal, most Santal children attend state schools where Bengali is the language of instruction. In the neighbouring states, other languages are prevalent. At the same time, Latin letters are still in use as well, not least because some of the books prepared early on by the missionaries are still in print. They are indeed very useful.

Things have become even more complicated in the past two decades because government agencies started to approve a seventh script. It is called Ol-chiki and was designed to more accurately represent Santali phonemes. Since the turn of the millennium, state institutions have been promoting this innovative alphabet consistently, and they now consider it the only legitimate way to write in Santali

While many Santals wanted that to happen, the results are unconvincing. It is ironic, to put it mildly, that many well educated Santals who assertively endorse Ol-chiki as a token of Santal pride prefer to send their own children to schools that teach in Bengali or English. They know that their kids will have more opportunities in life if they are taught in Bengali, Hindi or English.

Our choice

The community-based organisation I work for runs a non-formal school for Santal children. We have chosen to use the Bengali alphabet. We know for certain that our pupils will have to be able to read Bengali later in life, and we do not want to burden young children with learning more than one script.

When they start school, we introduce Bengali letters and numbers for Santali words, and once they comfortably read the primers we have designed, we gradually move on to teaching them Bengali and later English as well.

We do our best to make them proud of our culture. We teach the kids traditional songs and dances. We regularly take them to a museum of Santal culture which we have set up in one of our villages and which displays more than 150 artifacts. Our curriculum covers topics that pertain to our village lifestyle, including organic farming, fisheries, vegetable gardening, beekeeping or herbal medicine. Of course, Santal history figures too. We want our young generation to be rooted in our specific culture and to have good opportunities to take their fate into their own hands. Using our language is essential. What alphabet we use in school, matters less. We tell our students about Ol-chiki – encouraging, but not forcing them to learn it.

11. Particularly vulnerable tribes: How a focus on nutrition tipped the health scale for children in remote Odisha

Amita belongs to the Dongria Kondh tribe, a particularly vulnerable tribal group (PVTG). The PVTGs in Odisha are known for their particularly poor outcomes such as very low levels of literacy, high maternal and infant mortality from endemic malaria as well as poor nutritional indicators.

India has 75 listed PVTGs with the highest number found in Odisha. Odisha has 13 PVTGs, with a population of 240,000 spread across 11 districts. These outcomes stem from underemployment of these groups on the one hand and poor access to service delivery outposts (such as primary health centers and sub-centres) on the other.

As poor nutritional status continues to remain an area of concern for the PVTGs, the state's Jiban Sampark nutrition programme is trying to bring in improvements. Like Amita, today many expecting and lactating mothers across the PVTG villages are being monitored and provided with one-time meals to keep their nutritional parameters buoyant. The state government has also initiated a focussed initiative, the Odisha PVTG Nutritional Improvement Programme (OPNIP) under the Odisha PVTG Empowerment and Livelihoods Improvement Programme (OPELIP).

OPNIP was initially started in three districts in phases in Malkanagiri, Rayagada and Kalahandi, and subsequently to nine others.

The major three interventions taken up under OPNIP were community-based creches for children of age 6 months to 3 years, spot feeding centres for children aged 3-6 yrs and maternal spot feeding centres for pregnant & lactating mothers.

Health remains a concern

There is no national health data specific to PVTGs but a study by Asian Institute of Public Health and the Scheduled Castes and Scheduled Tribes Research and Training Institute (SCSTRTI), conducted in 2015, shed some light.

Among those below the age of five years, 32 per cent of the respondents were severely stunted, 35 per cent were severely underweight and 18 per cent severely wasted. Around 34.9 per cent of the under-five age group were severely malnourished and 21.2 per cent were moderately malnourished.

Every third child who was weighed at birth had a low birth-weight.

Among women of reproductive age, 38 per cent were underweight and 54 per cent were found to be anaemic. Anaemia poses a significant risk for maternal and child survival.

SN Padhy, a social activist working with the PVTG groups for over 40 years, said:

The community lags behind the national average on several health indicators, with women and children being the most vulnerable. But we will also have to understand that this vulnerability towards poor health comes from multiple factors like lack of education, employability and financial security.

So when we speak of health, the approach needs to be holistic rather than unitary, the expert added. These interventions, in convergence with related state departments, are designed to prioritise the first 1,000 days of life when rapid growth and development take place.

Local PVTG self-help groups are entrusted with managing the OPNIP interventions, noted OPELIP. This strengthens the community ownership and empowers local PVTG women's collectives in managing such nutrition interventions in their community.

Identifying and bridging the food gap

The extent of dietary energy and protein inadequacy was more pronounced among PVTGs, studies have shown, reiterating the fact that there remains a food gap. The intakes of various micronutrients, specifically that of iron, vitamin A, riboflavin and folic acid was found to be grossly inadequate, which is in consonance with inadequate intake of protective foods.

Considering that poor nutritional status of mothers puts the children at a higher risk of diseases and mortality, the OPNIP provides pregnant and

lactating mothers with one hot cooked meal, through the supplementary nutrition programme for the period from registration of pregnancy till completion of exclusive breastfeeding. Currently, around 900 pregnant women and nursing mothers are receiving the meals at 119 maternal spot feeding centres under OPNIP in the PVTG villages. And the initiative has shown results.

Drubi Kirsani (24) (name changed) had suffered two miscarriages and postnatal complications after the birth of her other three children. Drubi, who belongs to the Bonda tribe in Padeiguda village, Malkangiri district, had anemia and was underweight. "I have never been to the hospital for institutional deliveries. All my deliveries happened at home. There was no institutional care after delivery either. I always feared for my kids because they were thin and underweight," Drubi said.

In August last year, she was enrolled at the spot feeding centre and provided daily meals and iron tablets.

"I generally eat just ragi or boiled rice for meals at home. My children eat that too," she said. The centre offers further dietary supplements with dal, vegetables and whole grains.

The 105 spot-feeding centres for PVTG children aged 3-6 years similarly provide hot cooked meals to around 1,100 children six days a week.

"Since small children from these hilly, tribal areas are not able to regularly commute to the Anganwadi Centres due to geographic inaccessibility, they are provided with the supplementary nutrition entitlement of morning snacks and hot cooked meal, as prescribed under Integrated Child Development Services, in the village of their habitation itself," an official from OPELIP said.

This is a deviation from the initial practice of providing take-home ration, said Namita Sahu, a nutrition coordinator. "We had observed that with take-home ration, there was no monitoring of what the mother would consume and what the child would consume. The spot feeding centres address this gap."

Their health parameters are also observed every month to chart the difference," she added.

Experts working with the tribal groups feel that the initiative can not exclusively address the issue of bridging the gap, but can complement in the process, bridging the nutritional gap. "A majority of the PVTG habitations are located in unreachable areas. These habitations are also scattered and there are villages / hamlets with just 10-15 households. In such a place, anganwadi centres are not feasible to be established," said AB Ota, former director of SCSTRTI.

Also, ration / food distributed for children normally ends up in the family food basket as the entire family is food insecure, Ota added. Thus, setting up creches and spot feeding centres is essential to bridge the nutritional gap of PVTG children.

Early child care

The initial years after birth, especially the first five years, are considered to be extremely vital for any child under five years of age, wherein optimal nutrition fosters healthy growth and improves cognitive development.

In Devgada village of Kandhamahal district's Belghar block, Sanjuli Majhi drops off three children at the creche before venturing out into the forest to collect minor forest produce.

Belghar is home to the Kutia Kondh PVTG tribe. The creche facility not only addresses nutritional improvement for the children but also helps mothers leave their young children under proper care. The children would otherwise accompany their parents into the forests and get exposed to insects, snakes and vector-borne diseases.

"There was a constant fear that my children would be bitten by snakes or any other insects. I would also develop back aches because the trek into the forest is usually through an uneven rocky path and would fall ill often," Sanjuli said.

Her children aged three years, two years and eight months had registered low birth weight. “When I enrolled them at the centre I was told that they were in the red zone. Now they are in the green zone and have shown significant improvement,” Sanjuli said.

At the centres for younger children aged 6 months-3 years, children receive three meals, supervised care and attention of trained crèche workers, who are members selected from the PVTG self-help group.

Creches function for 7-8 hours for six days a week and provide two snacks and one hot cooked meal, with a focus on calorie and protein-dense food items, said Jashoda Badanayale, nutritional manager in Belghar. “Around 60-70 per cent of calories and 75-100 per cent of their protein requirement is taken care of.”



Children from selected villages are scanned for malnutrition through various technical methods and those found to be suffering from severe acute

malnutrition are identified and treated with curative food and technical support, according to the programme.

A monthly log and growth chart is maintained to evaluate and assess the nutritional status of children. As a procedure to assess changes, the mid-upper arm circumference and weight is measured for all the children every month while the height is measured every four months. A community growth chart is maintained for all the children marking all improvements in green, minor improvements which still need care in yellow and children who need focussed attention in red.

An analysis report of the intervention showed that for the 25 old creches, 49.5 per cent children fall under normal weight category and reported an improvement of 6 per cent from the baseline data.

From April 2022, 61 creches for children under three years of age have been made operational, catering to around 1,000 children under three years of age. Additionally, 46 new maternal spot feeding centres cum crèches are on the anvil and will be set up soon. In the case of severe stunting, there is marked improvement with reduction from 34.8 per cent at baseline to 24.8 per cent in February 2023.

Not a smooth road still

While the initiatives have shown positive growth, challenges over training ground cadre and finances remain.

In Odisha, the share of the nutrition budget was 20.05 per cent of the state's total budget, while it was 5.03 per cent of the gross state domestic product in 2022-23. There has been an increment of 5.61 per cent in nutrition-specific components and of 28.46 per cent in nutrition-sensitive components for 2022-23, compared to 2021-22.

For OPNIP, in 2020-21 the nutrition budget was Rs 6.37 crore, which went down to Rs 3.3 crore in 2021-22. But it was revised to Rs 7 crore again for 2022-23.

Among the initial challenges were that women from self-help groups had to be trained to take up the initiatives, said P Arthanari, Project Director, OPELIP. “For finances, we are converging with different departments, so this remains an area of challenge as well.”

Experts also feel that interventions like these can yield better results when they are contextualised culturally. “For nutrition, we have a common approach across the country, which is developed and tested by the Government of India. But food has more cultural than nutritional value,” said Biswajit Modak, a public health expert from Odisha.

“So whatever the cultural food they have available within their immediate ecosystem, we should have a discussion with the tribal population and based on their food patterns, ecological systems and traditions, we should have our plan for nutritional initiatives,” he added.

12. Bharatiya Adim Jati Sevak Sanghathan (BAJSS)



Union Minister for Tribal Affairs recently inaugurated the renovated facilities at Bharatiya Adim Jati Sevak Sanghathan (BAJSS), New Delhi and laid the foundation stone of 'Centre for Preservation and promotion of Tribal Culture & Heritage' in Jharkhand.

'Centre for Preservation and promotion of Tribal Culture & Heritage':

- The **Centre for Preservation and promotion of Tribal Culture & Heritage** aims to **showcase and depict the rich legacy and way of life of tribal communities in Jharkhand**, serving as a **knowledge and information center** for tribal development.
- It is allotted a **Rs. 10 crores** budget from the **Union Ministry for Tribal Affairs**.
- It is intended to be a **live center** for artisans and aspires to become a **tourism hub** in the region.

About the BAJSS:

- The **BAJSS**, founded in **1948** by **Shri Amritlal Vithaldas Thakkar** (Thakkar Bapa) for tribal upliftment, houses a **collection of rare tribal artifacts and books**.
- Its museum and library are undergoing **digitization** for preservation and accessibility, with **interactive digital kiosks** providing information on tribal culture and history.
- An **MoU** with the **National Tribal Research Institute (NTRI)** in **2022** established BAJSS as a **resource center of NTRI**, enhancing research and knowledge dissemination in tribal studies.

At another event, he also **inaugurated** the recently renovated **National Unique Tribal Museum, e-Library and ST Girls' hostel** funded by the Union Ministry of Tribal Affairs at **Bharatiya Adim Jati Sevak Sanghathan (BAJSS)**, in New Delhi.

- The BAJSS was established in the year **1948** by **Amritlal Vithaldas Thakkar**, popularly known as Thakkar Bapa, an Indian social worker **who worked for the upliftment of tribal people**.