



- **Tribals in India**
- **Water Resources**





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TRIBALS IN INDIA

Chapter 1: A Snapshot - Scheduled Tribes

According to the last census of the Indian population conducted in 2011, around 8.6 percent of India's population is made up of indigenous tribes.

India has the second largest concentration of indigenous population in the world. Adivasis is the collective name used for the many indigenous peoples of India. The term Adivasi derives from the Hindi word 'adi' which means of earliest times or from the beginning and 'vasi' meaning inhabitant or resident, and it was coined in the 1930s, largely a consequence of a political movement to forge a sense of identity among the various indigenous peoples of India. Officially Adivasis are termed scheduled tribes, but this is a legal and constitutional term, which differs from state to state and area to area, and therefore excludes some groups who might be considered indigenous. Adivasis are not a homogeneous group; there are over 200 distinct peoples speaking more than 100 languages, and varying greatly in ethnicity and culture.

There are 577 tribes in India located in five major tribal belts across the country. Indian tribes constitute about 8.2 percent of the national population and mostly they are inhabited in the central belt in the middle and in the northeastern part of India. Illiteracy, higher level of dependency, and poor access to the outer world make the tribal population socially vulnerable. Nevertheless, the sex ratio and work participation rate especially for women is quite high among the indigenous people of India.

Article 342 of the Indian Constitution relates to a special provision in respect of "Scheduled Tribes" which are defined as the "tribes or tribal communities or parts of or groups within tribal communities which the President of India may specify by public notification".

The tribal groups are presumed to form the oldest ethnological sector of the national population. The tribal are: hunters, forestland, cultivators and minor forest product collectors, lived in isolation with near to nature hence, called son of soil. Though tribes in India have been divided and sub-divided into a large number of sub tribes, all mutually inclusive and the common features of all these tribes are (Memoria, 1957):

- They live away from the inaccessible parts lying in forest and hills
- They speak the same tribal dialect.
- Profess primitive religion known as "Animism" in which the worship of ghosts is the most important element and spirits
- Follow primitive occupations such as gleaning hunting and gathering of forests produce.
- Some of them have nomadic habits and many love for drink and dance.

Distribution and Composition

The concentration of tribal population stretch's along the Himalayas from Jammu and Kashmir, Himachal Pradesh and Uttar Pradesh in the West, to Assam, Meghalaya, Tripura, Arunachal Pradesh, Mizoram, Manipur and Nagaland in the Northeast. Another concentration is found in the hilly areas of Central India- Madhya Pradesh, Orissa and to a lesser extent Andhra Pradesh, which is bounded by the Narmada River in the North and the Godavari River in the Southeast. The tribal people generally occupy the slopes of the mountains. The tribal also inhabit the tract extending from the western coast of Gujarat and Maharashtra passing through central India up to the north-eastern region. Most of the concentration, around 87 percent of the country's total tribe population is found in the central belt of the country comprising Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, Andhra Pradesh, Orissa, Bihar and West Bengal.

The largest tribal population is found in Madhya Pradesh. A little less than one fourth of the total scheduled tribe population resides in Madhya Pradesh. The extent, to which a state's population is tribal, varies considerably. The tribes in Lakshadweep and Mizoram constitute more than ninety percent. In Northeastern states of Meghalaya, Nagaland more than eighty percent of the total population are tribal followed by Arunachal Pradesh and Dadra And Nagar Haveli with nearly two-third of the population, between twenty and thirty five percent in Assam, Manipur, Sikkim, Tripura, Madhya Pradesh and Orissa. Nearly ten percent in Gujarat, Rajasthan, Maharashtra, Assam, and Andaman and Nicobar Island; nearly six percent or less in Himachal Pradesh, Karnataka, West Bengal. And one or less than one percent in Kerala, Tamilnadu, Goa and Daman and Diu.

Historical context

Little is known of their history, although it appears that many were pushed into the hill areas after the invasions of the Indo-Aryan tribes 3,000 years ago. Indigenous peoples were not integrated into Hindu caste society, but there were many points of contact. Indigenous religious beliefs contain many aspects of Hinduism (and vice versa); Adivasis traded with settled villagers on the plains and sometimes paid tribute to Hindu rulers. In turn some Adivasi rulers conquered and ruled over non-Adivasis and some Adivasis permanently settled and entered caste society.

It was not until the unifying political rule of the British from the late eighteenth century that the government made substantial inroads into Adivasi society. British rule brought money, government officials and moneylenders into indigenous areas, beginning the process of encroachment on Adivasi land by outsiders. As a result, there were Adivasi revolts from the mid-nineteenth century in several parts of eastern India, and this forced the administration to recognize the vulnerable position of Adivasis and pass laws to protect their lands from outsiders. These laws (some of which are still on the statute book) barred the sale of indigenous lands to non-Adivasis and made provisions to restore alienated land. However, in practice most of these laws were widely disregarded, and unscrupulous merchants and moneylenders found ways to circumvent them. These problems are still encountered by Adivasis today, although their opponents are as likely to be large companies and state corporations as small traders and moneylenders. Christian missions began to proselytize in some indigenous areas, where (in contrast to Hindu and Muslim areas) they achieved a degree of success and also, most notably in the northeast, began a process of education and political awareness.

Constitutional status

The vast majority of indigenous peoples were classified as scheduled tribes.

- Article 341 authorizes the President of India to specify 'castes, races or tribes which shall for the purposes of this constitution be deemed to be scheduled tribes'.
- The first amendment to the constitution passed in 1951 allowed the state to make special provisions for the advancement of socially and educationally backward classes of citizens of the scheduled castes and scheduled tribes.
- The central government has a special commission for scheduled castes and scheduled tribes, which issues an annual report. These reports give accounts of illegal actions against Adivasis and makes recommendations to improve their position.

Political representation

There are reserved seats for scheduled tribes in Parliament and the state legislatures. In the two houses of Parliament, the Lok Sabha and the Rajya Sabha, 7 percent of the seats were reserved for members of scheduled tribes, and similar representation occurs in the state assemblies in proportion to the percentage of scheduled tribes in the state's population. However, since the scheduled tribe voters are always a minority (except in the northeastern states where they are a numerical majority) in the reserved constituencies and in the legislatures as a whole, favourable legislation can be blocked by vested interests.

Furthermore, the system does not encourage organization of scheduled tribes by separate parties but limits it to organization and representation by the major parties, especially the Congress Party. Governments usually have ministers from scheduled tribes, including sometimes cabinet ministers, specifically to look after the affairs of scheduled tribes. The Bhuria Committee was set up by indigenous MPs to secure the extension of the 73rd and 74th articles of the constitution, which devolve authority to the Scheduled Areas.

Administration of scheduled areas: The scheduled areas are treated differently from the other areas in the country because they are inhabited by 'aboriginals' who are socially and economically rather backward, and special efforts need to be made to improve their condition. Therefore, the whole of the normal administrative machinery operating in a state is not extended to the scheduled areas and the Central government has somewhat greater responsibility for these areas'.

The various features of administration contained in the Fifth Schedule are as follows:

1. **Declaration of Scheduled Areas:** The President is empowered to declare an area to be a scheduled area. He can also increase or decrease its area, alter its boundary lines, rescind such designation or make fresh orders for such redesignation on an area in consultation with the governor of the state concerned.
2. **Executive Power of State and Centre:** The executive power of a state extends to the scheduled areas therein. But the governor has a special responsibility regarding such areas. He has to submit a report to the president regarding the administration of such areas, annually or whenever so required by the president. The executive power of the Centre extends to giving directions to the states regarding the administration of such areas.
3. **Tribes Advisory Council:** Each state having scheduled areas has to establish a tribes advisory council to advise on welfare and advancement of the scheduled tribes. It is to consist of 20 members, three-fourths of whom are to be the representatives of the scheduled tribes in the state legislative assembly. A similar council can also be established in a state having scheduled tribes but not scheduled areas therein, if the president so directs.
4. **Law applicable to Scheduled Areas:** The governor is empowered to direct that any particular act of Parliament or the state legislature does not apply to a scheduled area or apply with specified modifications and exceptions. He can also make regulations for the peace and good government of a scheduled area after consulting the tribes advisory council. Such regulations may prohibit or restrict the transfer of land by or among members of the scheduled tribes, regulate the allotment of land to members of the scheduled tribes and regulate the business of money-lending in relation to the scheduled tribes. Also, a regulation may repeal or amend any act of Parliament or the state legislature, which is applicable to a scheduled area. But, all such regulations require the assent of the president.

The Constitution requires the President to appoint a commission to report on the administration of the scheduled areas and the welfare of the scheduled tribes in the states. He can appoint such a commission at any time but compulsorily after ten years of the commencement of the Constitution. Hence, a commission was appointed in 1960. It was headed by **U N Dhebar** and submitted its report in 1961. After four decades, the second commission was appointed in 2002 under the chairmanship of **Dilip Singh Bhuria**.

Resources & Threats

Over 95 per cent of the scheduled tribes still live in rural areas, and economic exploitation remains their most acute problem. Less than 10 per cent are itinerant hunter-gatherers but more than half depend on forest produce for their livelihood, many in the form of the tendu leaf, used for the production of bidi (cigarettes). From the time of the British administration, there have been laws regulating the ownership and use of the forests, and today most forest land is effectively nationalized, with large areas contracted out to private commercial interests. This has progressively deprived Adivasi communities of rights in the land, and they can be fined or imprisoned for taking forest produce which has traditionally been theirs.

The ostensible reason for state intervention has been to stop the destruction of forest land which has continued throughout this century. There are a number of reasons for deforestation, although it is often blamed on the Adivasis' shifting cultivation practices; one has been the increase in demand for firewood as fuel; another is the impact of commercial, sometimes illegal, logging. A serious threat to Adivasis is large-scale dam-building, for irrigation and hydroelectricity. A number of hydro schemes have been carried out since independence, and a constitutional and political war is currently being waged over the construction of the largest dam in the Narmada basin.

As with the scheduled castes, members of scheduled tribes are **beneficiaries of affirmative action** provisions laid down in the constitution, which reserve places in education, the civil service and nationalized industries. Affirmative action policies have led to a noticeable increase of Scheduled Tribes in government sector employment and in public educational institutions. However, any success of reservations have been uneven across sectors; while significant improvements are visible at the lower rungs of governmental services, there is a dearth of Schedule Caste representation at the higher echelons of public service and key governmental posts. Furthermore, the affirmative actions policies - strictly limited to public sector - have not improved the prospects of Schedule Tribes in the growing private sector. Even in the limited areas of positive advantages, Adivasis often face hardships and exclusion because of physical remoteness, poverty and prevalent social prejudices. Since few Adivasis finish schooling, most are unable to use the reserved places in higher education or the civil service.

Current issues

Adivasis continue to face prejudice and often violence from mainstream Indian society. They are at the lowest point of almost every socio-economic indicator. The majority of the population regards them as primitive, and government programmes aim at integrating them with the majority society, rather than allowing them to maintain their distinctive way of life. While the larger tribal groups and languages will survive as a result of numbers, the destruction of their economic base and environment poses grave threats to those who are still able to follow their traditional way of life and may result in the cultural extinction of many of the smaller Adivasi peoples.

- **Reservation woes:** Although beneficiaries of India's extensive reservations, it remains the impact of the quota system upon Adivasis has remained negligible up until 2006. The quotas within higher education and jobs which require technical knowledge seem to have not worked in improving access so far. Quotas for Adivasis, for example, at the higher education levels remain unfilled. About 68 percent of Dalit and Adivasi children drop out before high school.
- **PESA:** The Panchayat Raj (Extension to the Scheduled Areas) Act of 1996, was introduced in the late 1990s as a legislative means of promoting self-governance in rural areas through the creation of local village bodies. This legislation has helped adivasis to formulate responses to various local issues and to organise themselves at a local level by building local political institutions. The implementation of the Act needs to be strengthened further to help adivasis protect their interests and identity in various states across India.
- **Land Rights:** There has been a lack of supportive role by the state to the Adivasi community when it has come to land re-distribution rights, rights of marginal farmers and daily wagers, rights of the tillers of the soil and rehabilitation rights. It needs to be stated that Adivasis constitute the poorest component across various states in India irrespective of the political make-up of the state governments.
- **Displacement:** The nationalisation trend of the 1970s to build heavy industry close to the source of raw materials has further contributed to systematic displacement of Adivasis from their land. One of the major reasons for the economic and social problems of the adivasi population has been their gradual displacement from land.
 - Adivasis have been denied land ownership rights over the last century and their displacement from their land has made them reach a stage where they are fighting to retain their economic and social identity.
 - Not only is the amount of compensation received by the Adivasis extremely small but also the number of adivasis who have been compensated is negligible. The reason is that legal obstacles are created to deny adivasis compensation rather than law being used to facilitate payment compensations as a sense of justice.

- One of the procedural impediments is that compensations are generally paid to individually owned land in law whereas Adivasi land is usually community owned or in the name of a dead ancestor. One of the few positive initiatives introduced by the current government are the Scheduled Tribes (Recognition of Forest Rights) Bill 2005.
- The Bill recognises Scheduled Tribes as legitimate stakeholders in the management of forests. It aims to secure such rights for the Schedule Tribes as ownership of minor forest produce, grazing rights, habitat and habitation for primitive tribes and the community rights to traditional knowledge related to cultural and forest diversity. Notwithstanding these high ideals enshrined in the Bill, its legislative impact is yet to be established.
- On the whole, however, the role of the State in 2006 has been extremely oppressive and the State has acted more as an entity that has repeatedly denied basic legal rights to Adivasis rather than helping them with compensation and rehabilitation for their land. There has only been a continuation of exploitative state policy where successive state and central governments have failed to secure the land rights and the ownership interests of Adivasi communities across India in the post-independence period.

Chapter 2: Policies on Scheduled Tribes

National Commission for Scheduled Tribes (NCST)

- NCST was set up with effect from 19th February, 2004 by amending Article 338 and by inserting a new article 338A in the Constitution through the 89th Constitution Amendment Act, 2003.
- Hence, it is a **constitutional body**.
- **Powers:** It oversees the implementation of various safeguards provided to STs under the Constitution and to evaluate the working of such safeguards.
 - The commission is vested with all the powers of a civil court while investigating any matter on inquiring into any complaint relating to deprivation of rights and safeguards for the Scheduled Tribes
- **Composition:** It consists of a Chairperson, a Vice-Chairperson and 3 other Members who are appointed by the President by warrant under his hand and seal.
 - At least one member should be a woman.
 - The Chairperson, the Vice-Chairperson and the other Members hold office for a term of 3 years.
 - The members are not eligible for appointment for more than two terms.

The Constitution under Article 342 empowers the President to specify the Scheduled Tribes (STs) in various states and union territories.

Constitutional Provisions:

- **Article 342 (1)**- The President may with respect to any State or Union Territory, and where it is a State, after consultation with the Governor, by a public notification, specify the tribes or tribal communities or part of or groups within tribes or tribal communities as Scheduled Tribe in relation to that State or Union Territory.
- **Article 15**- Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth only.
- **Article 16**- Equality of opportunity in matters of public employment.
- **Article 46**- Promotion of educational and economic interests of scheduled castes, Scheduled tribes and other weaker sections.
- **Article 335**- Claims of Scheduled Castes and Scheduled Tribes to services and posts.
- As per Article 338-A of the Constitution of India, the National Commission for Scheduled Tribes has been set-up.
- **5th and 6th Schedule**- Administration and control of Scheduled and Tribal Areas.

Legal Provisions

- Protection of Civil Rights Act, 1955 protects rights against Untouchability.
- **Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989** prevents the commission of offences of atrocities against the people of the Scheduled Castes and the Scheduled Tribes.
- **Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996** provides for the extension of the provisions of Part IX of the Constitution to the Panchayats to the Scheduled Areas.
- **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** recognizes the rights of scheduled tribes and other forest dwellers.

Committees Related to Tribal Communities

- **Xaxa Committee (2013)** was set up to improve the socio-economic, health and educational status of the tribal communities in India.

- **Bhuria Commission (2002-2004)** was tasked with investigating and reporting on the problems of the Scheduled Tribes (STs) in India, formulating a comprehensive tribal policy and outlining a vision for the future of STs.
- **Lokur Committee (1965)** was tasked with advising the government on proposals by the states and union territories (UTs) to revise existing Scheduled Castes (SC) and Scheduled Tribes (ST) lists in a "rational and scientific manner."

Government's key welfare schemes for the tribal population

After Independence, provisions were made in the Constitution to safeguard tribal interests and promote their developmental and welfare activities through various government schemes. Governmental schemes tried to uplift and rehabilitation of tribals but faced challenges to achieve their goals and tribal proletarianization has persisted since independence.

Key welfare government schemes for tribals –

- **Development of PVTGs:** It is for 18 States and a UT for the activities like housing, land distribution, land development, agricultural development, and animal husbandry.
- **Mechanism for marketing of Minor Forest Produce (MFP) through MSP and Development of Value Chain for MFP:** The scheme seeks to establish a system to ensure fair monetary returns for their efforts.
- **Vanbandhu Kalyan Yojana:** The scheme proposes to bring the tribal population of the country at par with other social groups and include them in the overall progress of the nation. The government aims for holistic development of tribals by plugging in the infrastructural gaps and lags in human development indices.
- **Tribal Handicrafts:** TRIFED has set up TribesIndia a chain of showrooms where several categories of handicrafts are being marketed like tribal textiles, and tribal jewellery. TRIFED is also working on the capacity building of the tribes.
- **Eklavya Model Residential Schools (EMRSs):** To provide quality middle and high-level education to Scheduled Tribe (ST) students in remote areas, to enable them to avail of reservations in high and professional education courses and as jobs in government and public and private sectors.

Challenges faced by the government while implementing of tribal welfare schemes –

- Social barriers pertain to dealing with the tribal social system. Cultural barriers are related to different cultural values which come in the way of the adoption of innovation.
- Poor implementation of programs is reason for the lack of social development among tribes. Another argument regarding the poor development of the tribal populations is built around the issue of the traditional socio-cultural aspects of tribal life.
- Massive development displacement of tribes. Tribal areas have witnessed the development of industry, mining, and infrastructure projects such as hydraulic projects such as dams and irrigation. It has been often loss of livelihood and involuntary migration of tribes.
- About 40 percent of those displaced by dam-building belong to the Scheduled Tribes. Scheduled Tribes constitute about eight percent of the country's population; they are clearly disproportionately represented in the number of displaced persons.
- The Provisions of PESA 1996 and FRA 2006, enacted to redress the historical injustice to tribal and forest communities, have been significant initiatives that have changed their legal status. However, policies and practices have been slow to absorb the changed circumstances recognized in the law.
- Massive push to development agenda with economic liberalization and the entry of private corporations into tribal areas, has been met with considerable resistance by tribal communities.
- Of the nine States considered to be seriously affected by LWE, six are States with Scheduled districts. LWE is primarily a national security problem that is addressed militarily. This approach is resulting in the further alienation of tribal communities, widening the trust deficit between the State and the tribal people, and creating hurdles in implementation.
- Northeast is often viewed as a singular and homogeneous entity, the region is highly diverse with over 200 tribes and sub-tribes, each of which has its own language, culture, and political structures. Therefore, DoNER in the Northeast faces challenges also conflicts between the State and tribal groups, between different tribes, and between tribes and non-tribal groups hampering the relationship between people and administration.

High-Level Committee under Virginius Xaxa recommended appropriate interventional measures to improve the same –

- New micro-agencies need to be created in such pockets to cater to specific tribal groups.
- Protecting the land and forest rights of tribal communities is equivalent to protecting their livelihoods, life, and liberty.
- The right to preservation of their language, culture, and traditions, and to protect themselves against the loss of identity, must be recognized, protected, documented, and allowed to thrive as a dynamic living culture.

Schemes are facing grassroots implementation problems. But it does not mean that these schemes are a failure. Due to such initiatives, many tribal communities of India improved their economic, educational, social, and cultural status. Due to

such a scheme mainstreaming and channelization of scheduled tribes took a leap forward. By strengthening the weaknesses of tribal area schemes the objective of their existence in the modern world can be achieved.

Odisha's project 'Samhati' for tribal languages

Context: The new National Education Policy lays emphasis on imparting teaching in mother tongue in primary classes.

- Thus, Odisha has launched Samhati project for imparting its various tribal languages.
- The project will help save endangered tribal languages.

About Odisha's Samhati project

- According to the Odisha School Education Programme Authority (OSEPA), more than 302 textbooks and 2,500 supplementary reading materials including story books and pictures charts in 21 tribal languages have been developed.
- Under Samhati, all teachers of primary level would be provided functional knowledge of tribal languages.
- Implemented by: The Scheduled Castes and Scheduled Tribes Research and Training Institute (SCSTRI) and the Academy of Tribal Language and Culture (ATLC), Bhubaneswar
- Of the 21 languages, Santhali — the only language which has been included in eighth schedule of Constitution — is taught in its own Ol Chiki script while rest of tribal languages have Odia scripts.

Do you know?

- Odisha is home to 62 different tribal communities including 13 particularly vulnerable tribal groups (PVTGs), making it the State with the most diverse indigenous communities in the country.
- Of Odisha's 21 tribal languages, Santhali — the only language which has been included in eighth schedule of Constitution — is taught in its own Ol Chiki script while rest of tribal languages have Odia scripts.

Chapter 3: Indigenous Culture and Tribals Across India

The lively tableau of the tribal community in India stretches from the remote villages tucked in the Indian Himalayan region to the southernmost tip of India and from the farthest corner of North East India to the dunes of Rajasthan.

Medharam Jathara - Asia's Largest Tribal Festival

- To honour the Hindu Tribal goddesses
- Celebrated in the state of Telangana at Medaram village of Mulugu district
- This Jathara is known for witnessing one of the largest people gatherings in the world.
- According to a tribal story, in the 13th century some tribal leaders who went for hunting found a new born girl (Sammakka) emitting enormous light and playing amidst tigers. She was taken to their habitation. The head of the tribe adopted her and later she became the saviour of the tribals of that region.
- Devotees offer jaggery equal to their weight as thulabaram (weighing scale) or as thanksgiving in fulfilment of their vows.

Important Tribes of India (Statewise)

State	Tribes
Andhra Pradesh	Andh, Sadhu Andh, Bhil, Bhaghata, Dhulia, rona, Kolam, Gond, Thoti, Goundu, Kammara, Savaras, Dabba Yerukula, Sugalis, Nakkala, Pardhan, Gadabas, Chenchus A.k.a Chenchawar, Kattunayakan, Jatapus, Manna Dhora
Arunachal Pradesh	Singpho, Monpa, Abor, Sherdukpen, Galo, Apatanis

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Assam	Khasis, Chakma, Dimasa, Gangte, Garos, Hajong, Chutiya
Bihar	Gond, Birjia, Asur, Savar, Parhaiya, Chero, Birhor, Santhals, Baiga
Chhattisgarh	Nagasia, Biar, Khond, Agariya, Bhattra, Mawasi, Bhaina,
Goa	Varli, Dubia, Siddi, Dhodia, Naikda
Gujarat	Patelia, Bhil, Dhodia, Bamcha, Barda, Paradhi, Charan, Gamta
Himachal Pradesh	Swangal, Gujjars, Lahaulas, Khas, Pangwala, Lamba, Gaddis
Jammu and Kashmir	Balti, Garra, Sippi, Bakarwal, Mon, Gaddi, Purigpa, Beda
Jharkhand	Gonds, Birhors, Savar, Mundas, Santhals, Khaira, Bhumji
Karnataka	Gond, Patelia, Barda, Yerava, Bhil, Koraga, Adiyani, Iruliga,
Kerala	Malai, Aarayan, Arandan, Uralis, Kurumbas, Arandan, Eranvalla
Madhya Pradesh	Kharia, Bhils, Murias, Birhors, Baigas, Katkari, Kol, Bharia, Khond, Gonds,
Maharashtra	Warlis, Khond, Bhaina, Katkari, Bhunjia, Rathawa, Dhodia.
Manipur	Thadou, Aimol, Maram, Paite, Chiru, Purum, Kuki, Monsang, Angami
Meghalaya	Pawai, Chakma, Raba, Hajong, Lakher, Garos, Jaintias Khasis
Mizoram	Dimasa, Raba, Chakma, Lakher, Khasi, Synteng, Kuki, Pawai.
Nagaland	Nagas, Angami , Sema, Garo, Kuki , Kachari, Mikir, Konyak , Lotha
Odisha	Gadaba, Ghara, Kharia, Khond, Matya, Oraons, Rajuar, Santhals, Koraput.
Rajasthan	Bhils , Damaria, Dhanka, Meenas(Minas) , Patelia, Sahariya, Lambada (Banjara).
Sikkim	Bhutia , Khas, Lepchas .
Tamil Nadu	Adiyani, Aranadan, Eravalla, Irular , Kadar, Kanikar , Kotas, Todas.
Telangana	Chenchus .
Tripura	Bhil, Bhutia, Chaimal, Chakma, Halam, Khasia, Lushai, Mizel, Namte.
Uttarakhand	Bhotia, Buksa, Jaunsari, Raji, Tharu.
Uttar Pradesh	Bhotia, Buksa, Jaunsari, Kol, Raji, Tharu.

West Bengal	Asur, Khond, Hajong, Ho, Parhaiya, Rabha, Santhals, Savar.
Andaman and Nicobar	Great Andamanese, Oraons, Onges, Sentinelese, Shompens.
Little Andaman	Jarawa
Lakshadweep	Aminidivis, Koyas, Malmis, Melacheris.
North-East	Abhors, Chang, Galaong, Mishimi, Singpho, Wancho.

Gonds

- **Areas they are found in:** Known for their valor, the Gond tribes are mostly found in **Central India** in the Chhindwara district of Madhya Pradesh. They are also spotted in the Bastar district of Chhattisgarh, parts of Maharashtra, Andhra Pradesh, and Orissa.
- The Gond tribes have a good command over Telugu, Hindi, Marathi, Parsi and many other Dravidian languages.
- **Stands out:** The rural colour with mud walls and thatched roof houses, earthen pots, traditional wears – men in dhoti and women in sari and ornaments, the festivals of **Keslapur Jathra** and **Madaï** and ritual performances.
- **Staple food:** Kodo or Kutki.

Bhils

- **Areas they are found in:** Mostly spotted in the Aravali Ranges of Sirohi in Udaipur and some places of Dungarpur and Banswara districts of Rajasthan. Further, the settlements of the Bhil tribes are also found in parts of Gujarat, Madhya Pradesh, Maharashtra and Tripura.
- **Language:** Bhili language, which is an Indo – Aryan language
- **Stands out:** Ghoomar dance, Than Gair (a religious dance and drama) and Baneshwar Fair that is held in the month of January or February

Santhals

- **Areas they are found in:** Major tribes of West Bengal and are mostly seen in the districts of Bankura and Purulia. They are also widely seen in parts of Bihar, Jharkhand, Odisha and Assam.
- **Stands out:** The Santhali dance and music; moreover, festivals like Karam, Maghe, Baba Bonga, Sahrai, Ero, Asaria, Disum Sendra and Namah.
- It is also believed that Sidhu; a heroic Santhal, accumulated 10 thousand of his kind and ran a parallel government against the Britishers. It was way back in 1789 when Baba Tilka Majhi fought the first battle before any Santhal.
- According to the latest census, approximately 49000 Santhals are living all over India; majorly in Bihar.
- Few instruments that they have created including Tirio that adds to their fun of music and dance.

Great Andamanese Tribes

- Back in 2010 when Boa (one of the speakers of two Great Andamanese languages, Khora and Bo) died, the world lost two languages.
- The Great Andamanese Tribe, which includes the Onge, Jarawa, Jangil and Sentinelese, are said to be the first inhabitants of the islands. But today a significant number is on its way to extinction.
- Mostly spotted in Strait Island and parts of Rutland Island.

Sentinelese

- It is the most secluded, particularly vulnerable tribal group (PVTG) who reside in complete isolation on the Andamans.
- It has a population of about 50 to 100 on the North Sentinel Island.
- They are not only among the most isolated of nearly 70 PVTGs across the country, but also among the five in the Andaman and Nicobar Islands which include Great Andamanese, Onge, Jarawa, and Shompens.

Do you know?

- Though both Sentinelese and Great Andamanese are classified as PVTG, the tribes live in two completely different contact situation.
- While in the case of the Sentinelese their contact to the outside world is almost nil, the Great Andamanese had decades of exposure to the world outside their Island.

Khasi Tribes

- Mostly spotted in the Khasi Hills of Meghalaya and are also found in parts of Assam, Arunachal Pradesh, Manipur and West Bengal.
- **Language:** An Austro-Asiatic language
- **Dress:** Jainsem for women and Jymphong for men
- **Nongkrem festival**
- Here, children receive their mother's last name, husbands move into their wife's home, and the youngest daughters inherit the ancestral property.
- Khasi is used as an umbrella phrase to refer to many subgroups in Meghalaya who have distinguishing languages, rites, ceremonies, and habits, but share an ethnic identity as Ki Hynniew Trep (The Seven Huts).

Garro Tribes

- One of the few remaining matrilineal societies in the world that are mostly spotted in the hills of Meghalaya, the Garo Tribes are ideally known for their vivid lifestyle. They are also spotted in the neighboring areas of Bangladesh and parts of West Bengal, Assam, and Nagaland.
- The unique form of Garo architecture like Nokmong, Nokpante, Jamsireng and Jamadaal
- Wangala festival of Asanang

Angami Tribes

- The Angami Nagas are one of the major tribes of Nagaland, widely present in the district of Kohima.
- **Hornbill Festival:**
 - It is annually held from 1 – 10 December. The first festival was held in 2000.
 - The festival organized by Nagaland Government is an annual tourism promotional event to showcase the state's traditional and rich cultural heritage in all its ethnicity, diversity and grandeur.
 - The objective is to encourage inter-tribal interaction and to promote cultural heritage of Nagaland.
 - Highlights of the Hornbill Festival include witnessing the cultural performance of different tribes of Nagaland and Northeastern States, indigenous games, city tour, night carnival, art exhibition, photo-fest and many more.
 - One of the major highlights of this festival is the Hornbill International Rock Festival where local and international rock bands perform.
 - **Hornbills:**
 - India is home to **nine species of hornbills**: three of them, the **wreathed hornbill** (*Aceros undulatus*), the **brown hornbill** (*Anorrhinus austeni*) and the **Rufous-necked hornbill** (*Aceros nipalensis*) **great hornbill** is the state bird of Arunachal Pradesh and Kerala. India also has **Narcondam Hornbill**, found only on the island of Narcondam.
 - Hornbill festival celebrated in Nagaland is named after the bird – Hornbill which is the most revered and admired bird for the Nagas.

- Hornbills used to be hunted for their casques — upper beak — and feathers for headgear despite being cultural symbols of some ethnic communities in the northeast, specifically the **Nyishi of Arunachal Pradesh**.
- But a 20 year-old conservation programme entailing the use of fibreglass beaks reduced the threat to the birds to a large extent.
- **Major Attractions:** Intricate and beautiful woodcraft and artwork. The Angami Nagas are known for the producer of bamboo work, cane furniture, beds, shawls and powerful machetes.
- **Angami Language** is identified with different names such as Gnamei, Ngami, Tsoghami, and Monr
- **Dressing style** – men in white Mhoushu and black Lohe and women in Mechala along with ornaments like Beads, miniature mask pendants, bangles and bracelets

Tharu tribe

- The community of Tharu people belongs to the **Terai** lowlands.
- Most of them are forest dwellers, and some practice agriculture.
- Tharus worship **Lord Shiva as Mahadev**, and call their supreme being “Narayan”, who they believe is the provider of sunshine, rain, and harvests.
- The Tharus live in both **India and Nepal**.
- In the Indian terai, they live mostly in Uttarakhand, Uttar Pradesh, and Bihar.
- A majority still lives off the forest.

Do you know?

- They speak various dialects of Tharu which is a language of the Indo-Aryan subgroup, and variants of Hindi, Urdu, and Awadhi.
- In central Nepal, they speak a variant of Bhojpuri, while in eastern Nepal, they speak a variant of Maithili.
- Tharu women have stronger property rights than is allowed to women in mainstream North Indian Hindu custom.

Munda Tribes

- **Nupur** dance
- Their settlement is largely based in the Chota Nagpur Plateau region and is mostly spotted in the dense of Jharkhand. Further, parts of West Bengal, Chhattisgarh, Bihar, Odisha are also inhabited by the Munda Tribes.
- Follows the **Sarna religion**, believing in a God called Singbonga.
- Mage, Phagu, Karam and Sarhul are the major festivals of the Munda tribes
- Killi language
- Several pieces of evidence prove their presence during the pre-British era but this tribe got the admiration between 1857-1928, due to **Birsa Munda**.
 - Birsa was also believed to be a prophet and a freedom fighter who played a good part in the freedom struggle of India.
 - The state of Jharkhand was created on his birth anniversary in the year 2000.
 - Janjatiya Gaurav Divas: 15th November, the birth anniversary of Bhagwan Birsa Munda
 - Spearheaded movement against British oppression giving a call for ‘Ulgulan’ or the Great Tumult (Revolution).
 - **Munda Revolt:** In the late 1890s, Birsa set out to abolish the feudal system that the British had introduced in the Adivasi forest land.
 - Under this system, the British invited migrants from other states to take over work on tribal land, while they usurped all the profits. Thus, the original owners were left bereft of their land and any means of livelihood.

- In March 1900, while fighting the British alongside his guerilla army, Birsa was arrested in Jamkopai forest in Chakradharpur. A few months later, he passed away in custody. The icon of India's Independence struggle attained martyrdom on 9 June at the age of 24.
- Almost a decade after his death, the British introduced the Chhotanagpur Tenancy Act (CNT), which prohibits the transfer of tribal land to non-tribal parties.

Separate religious code for Sarna tribals

The Sarna Religion

- The followers of Sarna faith believe **pray to nature**.
- The holy grail of the faith is "**Jal (water), Jungle (forest), Zameen (land)**" and its followers **pray to the trees and hills while believing in protecting the forest areas**.
- Jharkhand has 32 tribal groups of which eight are from Particularly Vulnerable Tribal Groups.
- While many follow Hindu religion, some have converted to Christianity — this has become one of the planks of demanding a separate code "**to save religious identity**" — **as various tribal organisations put it**.

Why need Sarna Code?

- It is believed that **50 lakhs tribal in the entire country put their religion as 'Sarna' in the 2011 census**, although it was not a code.
- Thus it is important to recognize them.

Politics around the code

- Many of the tribals who follow this faith have **later converted to Christianity**—the state has more than 4% Christians most of whom are tribals.
- Some who still follow the Sarna faith believe the converted tribals are **taking the benefits of reservation** as a minority.
- They also believe that benefits should be given specifically to them and not those who have converted.

What sense does a separate code make?

- The **protection of their language and history** is an important aspect of tribals.
- Between 1871 and 1951, the **tribals had a different code**. However, it was changed around 1961-62.
- Experts argue that when today the entire world is focusing on reducing pollution and protecting the environment, it is prudent that **Sarna becomes a religious code as the soul of this religion is to protect nature and the environment**.

Bhutia Tribes

- Dominating the landlocked territory of Sikkim that is bordered by the Indian Himalaya, the Bhutias are widely known for their traditional grandeur, art and cuisine.
- **Festivals:** Losar and Loosong

Chenchu Tribes

- One of the indigenous people of Andhra Pradesh inhabiting over the years in the midst of the forest of Nallamala Hills. They are mostly seen in the districts of Mahaboobnagar, Nalgonda, Prakasam, Guntur and Kurnool.
- Largely dependent on hunting and trading jungle products like roots, tubers, fruits, beedi leaves, mahua flower, honey, gum, tamarind and green leaves.
- Extremely ritualistic

Kodava Tribes

- Kodava tribe is known for their bravery
- Fond of music and dance, one can witness such hues during the festivals of **Puttari, Kaveri Sankramana and Kailpodhu**.

- Passionate about **hockey** with both men and women playing the game - **Kodava Hockey Festival** is held every year.

Saharia tribe

- The Sahar, Sehariya, or Sahariya is an ethnic group in the state of Madhya Pradesh and some districts of Rajasthan.
- They are classified as particularly vulnerable tribal groups.
- The Sahariya community considers every adult member part of a governing council which is headed by a Patel.
- The Sahariyas are expert woodsmen and forest product gatherers.
- They are particularly skilled in making catechu from Khair trees.

Bondas

- The community resides in the hill ranges of Malkangiri district in Odisha.
- It belongs to a particularly vulnerable tribal group (PVTG).
- It lives in settlements comprising small hutments in the hills of the Khairaput block.

Bru

- Bru or Reang is a community indigenous to Northeast India.
- It lives mostly in Tripura, Mizoram and Assam.
- In Tripura, they are recognised as a Particularly Vulnerable Tribal Group.
- In Mizoram, they have been targeted by groups that do not consider them indigenous to the state.
- In 1997, following ethnic clashes, nearly 37,000 Brus fled Mizoram and were accommodated in relief camps in Tripura.
- Since then, 5,000 have returned to Mizoram, while 32,000 still live in six relief camps in North Tripura.

Toto Tribe

- One of the endangered tribes of India that can be found in the Totopur region of West Bengal.
- According to the last survey, the total number of people in this tribe counts not more than 1500 which is why they are also tagged as an endogamous group.
- These people have a very low literacy level and employment.
- The Toto tribe practices endogamous marriages and almost 80% of people in the tribe are infected by thalassemia which is a form of anemia. This infection has also reduced the age expectancy of these people and limited it to just 35 years which is way lesser than the national average.

Madia Tribe

- Madia tribe or Madia Gonds or Maria are other endogamous tribes that live in the Gadchiroli and Chandrapur districts of Maharashtra.
- The government of India has given them the status of "Primitive tribal group." This tribe resides in the Dandakaranya forest as well. This is one of the oldest tribes in India that have lived for centuries.
- Until recently, this tribe was completely cut off from the outside world having no idea about clothing, language, health care, education, and other essentials.
- The people of this tribe are skilled craftsmen and hunters who use Madia as their communication language.

Ka Thakar Tribe

- Ka Thakar, Thakar, and Ma Thakar are different groups of tribes that fall under the same community.
- Primarily found in the Thane, Pune, Raigad, Nashik, and Ahmednagar districts of Maharashtra. Initially, this tribe resided in the Sahyadri Range but over time, they started moving out and now can be found in several places across the state. Wherever they stay, the place is called Thakarwadi.

- The Ka Thakars are skillful bamboo artisans, small cultivators, fishermen, daily-wage laborers, and often seen gathering minor forest produce for their living.

Warli Tribe

- Warli is one of those tribes of India that have their presence across different regions of Maharashtra, Karnataka, and Gujarat. They are spread across Nashik, Thane, and Dhule in Maharashtra, Valsad in Gujarat, some places of Karnataka, Dadra & Nagar Haveli, Goa, and Daman & Diu.
- These people are known to be small-scale cultivators of vegetables, pulses, and rice. These people also actively participate in selling fuelwood, mahua, toddy, and a few other products to the other neighboring communities for their living.
- People of the Warli Tribe don't worship any god other than nature. Warli art is based on their belief system that was established by their ancestors centuries ago and the same is being followed ever since.
- The people of this tribe never had a "written word" until recently and it was only their art that transmitted their belief system for generations. Where all the sculptures and drawings have always depicted their community traditions the tools have been a part of nature.

Koraput tribals

Tribes	Features
GADABA	<ul style="list-style-type: none"> • Gadabas belong to the Munda group of tribes • They speak Gutab and Desia dialect of the Austro-Asiatic language family. • Extensively practice shifting cultivation and they cultivate a mix variety of millets, pulses and niger. • Fond of dance and music. • Famous for their typical Dhemsā dance which is performed by the women wearing saree called Kereng
OMANATYA	<ul style="list-style-type: none"> • Mostly depends on agriculture for their livelihoods. • Adorn a black bead of necklace worn around the neck. • Their popular dances include Junia Nach and Chera Chera Nach.
PAROJA	<ul style="list-style-type: none"> • Parojas are one of the largely populated tribes of this region. • Their artistic talents find expression in Dhemsā, Dungdunga dances and in laga songs.
SAURA	<ul style="list-style-type: none"> • The Sauras are one of the most ancient tribes in Odisha mentioned in Hindu myths and classics, notably the Purans. • They have the habit of always carrying an axe over their shoulder • Their primitive occupation of hunting & living on the spoil of chase • They speak an ancient Mundari dialect of their own called 'Sora'. It belongs to the Austic family of languages

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WATER RESOURCES

Chapter 4: Water Resources

Water stress and water scarcity

- Water stress is the difficulty of obtaining sources of fresh water for use during a period of time and may result in further depletion and deterioration of available water resources.
- Water scarcity involves water stress, water shortage or deficits, and water crisis.
- Water scarcity can be due to physical water scarcity and economic water scarcity. Physical water scarcity refers to a situation where natural water resources are unable to meet a region's demand and economic water scarcity is a result of poor water management resources.
- The latter is found more often to be the cause of countries or regions experiencing water scarcity, as most countries or regions lack the means to provide water in an accessible manner.

Causes of Water Scarcity

- **Overuse of Water:** Indevolved countries per capita water consumption is far more than developing and poor countries. An average U.S. family wastes 13,000 gallons of water every year.
- **Geographical distribution:** Usage depends on availability of water; Canadian households use an average of 91 US gallons each day, while American households use just over 100 gallons. Contrast this to Israel, where water supplies are limited, which uses an average of only 36 gallons per household per day.
- **Pollution of Water:** 80 percent of wastewater from human activities is discharged into waterways without any pollution removal. Bangalore water crisis was due to pollution in city's lakes and rapid urbanisation.
- **Conflict:** Water stress in Yemen, Syria, and Iraq are examples of water crisis due to conflicts. War disrupts the infrastructure as well as administration.
- **Distance:** Areas that are considered to be desert, or areas that are secluded deal with water scarcity because they just aren't close to anywhere that has water.
- Women in sub-Saharan Africa collectively spend about 40 billion hours a year collecting water. This significantly impacts their employment opportunities.
- **Drought:** A drought is an area which is not getting enough rainfall to be able to sustain the life that is residing there. Some areas are in perpetual drought, whereas other areas may be dealing with a drought on occasion.
- Some examples of it are from India itself, Marathwada region in Maharashtra is usually under drought conditions throughout the year. Another classic example is the recent water crisis in Cape Town, South Africa, major reason here was drought.
- **Climate Change:** Due to climate change and rising temperature there is change in global weather pattern and monsoon. Leading to drying up of rivers and reservoirs. Floods too affect the usability of water.

In India –

India has sizeable water resources, but the country faces huge challenges in the water sector as the distribution of water varies widely by season and region owing to the growing scarcity; increasing pollution; enhanced competition, conflicts and trans-boundary water sharing issues; that have dominated the national discourse in current times.

Although industry is the largest contributor to India's GDP, agriculture accounts for nearly 90% of water use. Two-thirds of India's irrigation needs and 80% of domestic water needs are met using groundwater, contributing to the significant groundwater depletion rate. Although India has one of the world's largest irrigation systems, it is characterised by high levels of inefficient water use

The country is also facing the potent threat of climate change, which may have complex implications on the pattern of availability of water resources including changes in pattern and intensity of rainfall and glacial melt resulting in altered river flows, changes in ground water recharge, more intense floods, severe droughts in many parts of the country, salt water intrusion in coastal aquifers, and a number of water quality issues.

For India—

Improving water security is essential for India's development—

- With total water demand in India expected to rise by over 70% by 2025, a huge demand-supply gap is expected in the coming years and will act as a potentially significant constraint on economic growth
- The alarming rate of groundwater depletion is also cause for serious concern
- Declining water tables means increased cost of pumping, salty irrigation water as a result of over-abstraction leading to crop and revenue losses for farmers, and long-term consequences for water availability.
- Poor water quality and lack of adequate access to sanitation are also major causes of disease and poor health.

It is critical for India to keep an eye on efforts to end its internal water wars, which represent one of the least-understood yet most pressing threats to its stability and development. There is a need to practice the concept of the 4Rs (Reduce, Reuse, Recycle, Recover) for water management in line to achieve goal 6 (Ensure access to water and sanitation for all) of the SDGs.

4.1. Equitable Water Resources Management

Steps to ensure equitable distribution of water:

- Inter-State River Water Disputes (Amendment) Bill, 2017 which has provision of Single Tribunal, timely resolution, data collection and maintenance of a data bank needs to be implemented to overcome lacunas of Inter State River Water Dispute Act, 1956.
- Interlinking of rivers- can help in adequate distribution of river water in the basin areas.
- Scientific mapping of water resources so that effective management of water resources can be done.
- Water disputes need to be depoliticized and not be made into emotional issues linked with regional pride.
- Bringing water into concurrent list as recommended by Mihir Shah report where central water authority can be constituted to manage rivers.
- Supply Side Management: water resources should be utilized and harnessed properly through undertaking long-term measures towards saving water and rationalizing its use.
- Inter-State Council (ISC), GST council etc. can play a useful role in facilitating dialogue and discussion towards resolving conflicts.
- One model to follow is France's system of "water parliaments," which are responsible for managing the country's rivers, and which reserve a number of seats for non-governmental and environmental organizations.

Essentials for Sustainable Water Management

Comprehensive assessment of water resources:

- The last time a comprehensive assessment of water resources for the entire country was done was in 1999-2000
- Planning: Needs to be based on updated data
- Need for a complete assessment on water availability (use and future demand)
- US National Aeronautics and Space Administration: India's water tables are dropping at the rate of 0.3 metre a year
- Per capita availability of fresh water in India has declined from 3,000 cubic metres to a little over a thousand cubic metres; the global average is 6,000 cubic metres
- Of the country's two sources of fresh water—surface water and groundwater—the latter accounts for some 55%. It also accounts for about 60% of irrigation needs, which take up 80% of India's total water usage.

Groundwater depletion:

- **Problem:** Limiting groundwater extraction
- No exact estimates on the number of groundwater extraction units in the country and the number of observation wells is far too less
- Urgent need: To increase the number of observation wells across different regions to get an accurate estimate of groundwater levels

Eg: Brahmaputra has the highest total water potential of all rivers in India, but only about 4% of this can be successfully used because the mountainous terrain through which it flows makes further extraction impossible

Deteriorating groundwater quality—

- Makes a large section of our population, depending on groundwater as their major source of drinking water, vulnerable
- Central Ground Water Board: India faces the problem of arsenic, fluoride, nitrate and heavy metal contamination
- Cause of groundwater pollution: Both natural and anthropogenic
- **Need to look at—**
 - A complete profiling of aquifers,
 - Conjunctive use of surface and groundwater and
 - Programmes for rainwater harvesting and aquifer recharge

Improving water-use efficiency—

- Crucial for reducing the dependence on freshwater sources
- Agriculture accounts for 85 per cent of the total water use and therefore, resource optimisation in this sector is vital
- Massive agricultural subsidies have incentivized indiscriminate water usage and inefficient cultivation pattern, the system "encouraging using more inputs such as fertiliser, water and power, to the detriment of soil quality, health and the environment"
- **Water-use efficiency:**
 - By the adoption of low-cost technologies

- Better demand management
- Effective recycling and reuse

Water law in India continues to remain non-uniform, inconsistent, and somewhat inadequate to deal with today's complex water situation characterized by scarcity and depletion of this renewable but limited resource, and increased demand.

Good national water management requires a paradigm shift, comprising at least the following:

- Clear and comprehensive science-based Water Resource Policy at Central and State levels for integrated water resource management, which focuses on both supply- and demand-side dimensions of water use.
- A Water Framework Law at Central level laying out the architecture for planning and regulation and technical institutional support.
- Effective legislation at State level (based on the Central Model Law) for regulation of ground water and surface water providing an explicit and increasing role for Municipal and Panchayati Raj Bodies in planning, management, and regulation.
- Restructuring, strengthening, and empowerment of the existing institutions (Central, State, and local) involved in different aspects of service delivery so as to improve efficiency in management and sustainability of the resource.
- Shift in approach in water resource management from purely engineering works to systems that incorporate traditional practices, local materials and are manageable and maintainable by local communities.
- The Gram Panchayat as well as the local community need to be involved at all stages of discussion, planning, implementation, management and maintenance.
- Funding for capacity-building and R&D to bring in resource use efficiency and sustainability.
- A Water Portal with full disclosure of all the data in usable formats, accessible to Government institutions, policy makers, society, and regulatory institutions.

Some of the most important initiatives taken by the Ministry of Water Resources to conserve and augment India's water bodies:

The Government of India has created the Ministry of Jal Shakti by integrating the Department of Drinking Water and Sanitation and the Department of Water Resources River Development and Ganga Rejuvenation, with a goal of integrated water resources management under one umbrella, so that all the issues relating to water are dealt with in a holistic manner.

Some of the most important initiatives taken by the Ministry of Water Resources to conserve and augment India's water bodies includes:

- The Ministry of Jal Shakti under the Indian government launched the **Jal Shakti Abhiyan** in 2019. It is a nation-wide water conservation campaign that aims at encouraging citizen participation to promote water conservation at the grassroot level.
- **Jal Shakti** is monitoring Interlinking of River (ILR) programme with the mission of ensuring greater equity in the distribution of water by enhancing the availability of water in drought prone and rain-fed area.
- **On the World Water Day, March 22nd 2021, the government launched the 'Jal Shakti Abhiyan: Catch the Rain'** with the theme 'Catch the rain, where it Falls When it Falls' under which, the government focuses on creation/ maintenance of water conservation and rainwater harvesting structures, renovation of various traditional water bodies tanks, reuse and recharge of bore wells, watershed development and intensive afforestation.
- **Jal Shakti Abhiyan – Har Ghar Jal Scheme (National Water Conservation Scheme 2019-20)** was launched to ensure water security and providing safe water to all Indians with the aim to provide drinking water supply for all rural households in the country by 2024.
- **The Jal Jeevan Mission** is set to stress on local infrastructure for rainwater harvesting, management of waste water for sustainability of source as well.
 - Focus is on various water conservation efforts like point recharge, desilting of minor irrigation tanks, use of grey water for agriculture and source sustainability.
 - The Jal Jeevan Mission will connect with other Central and State Government Schemes to achieve its objectives of sustainable water supply management across the country.

4.2. Traditional Water Conservation

Water conservation is a key element of any strategy that aims to alleviate the water scarcity crisis in India. With rainfall patterns changing almost every year, the Indian government has started looking at means to revive the traditional systems of water harvesting in the country. Such traditional water harvesting techniques include, Taanka, Jhalara, Talab, Bawari, Kund, Khadin, etc., all of which were mainly used during ancient or medieval India, to ensure year-round water availability for crops.

Few Examples:

- **Mission Kakatiya** by Telangana government to inter link all tanks and canals to divert flood water is learned from medieval dynasty Kakatiya.

- **Ancient Sringaverapura Tank in Allahabad** is a system to take away Ganga flood water into desilting chamber could be used for drinking water in urban area
- **Dholavira town** of Indus Civilization had built lakes to collect monsoon runoff, inlet channels and intricate drainage system for drinking can be used under Smart Cities planning.
- **Dams in South India, built during Chola period** have made extensive irrigation possibility in Tamil Nadu at the same preserving environment of Cauvery. Valuable lesson of environment impact assessment can be learned.

These traditional techniques provide a sustainable alternative to modern techniques, because:

- Farm ponds, filled during rainy season, can effectively act supplementary to tubewells and canals, leading to lesser stress on both govt and farmer
- Such water collection places can be easily constructed under MGNREGA, while benefitting both labourers with more work and farmers.
- These methods are eco-friendly, unlike others which encroach upon the local flora and fauna
- Will give a sense of belonging to the farmers, with such local infrastructure and they will work hard to maintain such free of cost initiatives
- Can also be used to install solar cells on such ponds, which will reduce evaporation of water

On the other hand, such traditional systems are inefficient in some ways:

- In ancient India, water table was quite high and only a few metres of digging was required. Today, water level is much lower, for which tubewells or submersibles are more adequate
- Such ponds mostly relied on timely rainfalls for regular rejuvenation. But due to increasing pollution and climate change, monsoon schedule has become erratic
- With the increase in incidences of diseases like Dengue, malaria, etc. villagers object to large amount of stagnant uncovered water near their residences
- With increasing urbanisation and decreasing farm sizes, there are very limited places where such large sustainable infrastructure can be constructed, which limits its coverage.
- Such systems have low life cycles and hence re-invigoration has to be done constantly.
- During natural calamities such as floods, such systems pose a threat to life as they do not have proper embankments.
- High temperatures can easily evaporate water. Hence such systems may not be efficient.
- Limited land availability.

On the whole, it can be said that traditional methods can serve as supplementary irrigation initiatives in some places in rural India. Wherever possible, farmers should be encouraged to use such eco-friendly practices, which will both provide the farmers better irrigation facilities and lesser stress on govt to ensure farmer security.

India is a country of masses but that doesn't mean every problem will need massive solution. We have survived test of time which mean we have already obtained solution for different crises. Presently we need traditional and modern technique both are needed to reviewed and implemented in feasible way.

4.3. Water Management

'Composite Water Management Index'

This index is an attempt to budge States and UTs towards efficient and optimal utilization of water and recycling thereof with a sense of urgency. The Index and this associated report are expected to:

- Establish a clear baseline and benchmark for state-level performance on key water indicators
- Uncover and explain how states have progressed on water issues over time, including identifying high-performers and under-performers, thereby inculcating a culture of constructive competition among states
- Identify areas for deeper engagement and investment on the part of the states.

The Composite Water Management Index (CWMI) is a major step towards creating a culture of databased decision-making for water in India, which can encourage 'competitive and cooperative federalism' in the country's water governance and management.

Water Management in Urban Areas

Urbanisation affecting Waterbodies

Exploitation of Ground water:

- We need to also realise that with the country's rapid urbanisation, demand cannot be met by groundwater reserves alone.
- For instance, according to the Delhi Jal Board estimates, groundwater meets just 10% of Delhi's drinking water needs. The rest is met by surface water sources, most of it transported from outside Delhi.

Encroachment

- In Bengaluru, 15 lakes have lost their ecological character in less than five years according to a High Court notice to the city's administrative body responsible for civic amenities and some infrastructural assets.

Pollution

- There is an increasing level of urban population which however is not having enough civic facilities such as adequate infrastructure for the disposal of waste. Therefore, lakes become the dumping grounds for disposing untreated local sewage and solid waste.

Eutrophication:

- Lakes are closed water bodies. Therefore, a large part of the substances that enter in the lakes become a permanent part of it. There is a rapid change in the in the lakes which leads to growth of unwanted weeds destroying ecology of the lakes.

Unplanned Tourism Activities

- There is unplanned tourism activities as there is no systematic planning and regulation. There is no adequate facility to dump garbage which leads to lakes becoming dumping grounds. Therefore, adequate arrangements for sustainable tourism must be made in cities like Udaipur which is filled with lakes, Dal Lake in Srinagar, etc.

Implications:

Water Quality

- Research within India revealed the scale of urbanisation impacts in Hyderabad, where the number of waterbodies has fallen dramatically. Lakes in Hyderabad were also found to have fluoride concentrations exceeding maximum permissible limits set by the Bureau of Indian Standards and World Health Organization.
- Fresh Water Watch measurements identified key links between the nutrient concentration and inputs of raw sewage, domestic waste and industrial effluents.

Urban floods:

- Improper and Inefficient Urbanisation is the primary cause for the floods in urban areas, especially in metros. For instance, failure of the drainage system is believed to be one of the primary causes behind the Chennai floods in December 2015 that led to the death of more than 400 people.

Water Crisis

- Cooum, Buckingham canal and Adayar are the three rivers that runs through the chennai city, all are dried up and dead due to industrial wastes and lack of civic measures.
- These coupled with over exploitation of ground waters are turning cities into Dry and Dead cities in near future.

Solution – Mitigation & Rehabilitation

- Cities need to stop the destruction of local water bodies and local tree cover, treat its sewage properly, harvest rainwater, and stop straightening and concretizing the rivers and encroaching on their floodplain.
- Mission Kakatiya Model: Mission Kakatiya of Telangana involves the restoration of irrigation tanks and lakes/minor irrigation sources built by the Kakatiya dynasty.
- Reclaiming of Kundalahalli Lake: Kundalahalli lake in Bengaluru which had made way for a landfill has been reclaimed through corporate social responsibility funds in a Public-Private Partnership model.
- Mapping of the flood prone areas is a primary step involved in reducing the risk of the region. Historical records give the indication of the flood inundation areas and the period of occurrence and the extent of the coverage.
- Enacting the Flood Plain Zoning Bill in states
- The number of casualties is related to the population in the area at risk. Hence, in areas where people already have built their settlements, measures should be taken to relocate to better sites so as to reduce vulnerability.
- No major development should be permitted in the areas which are subjected to high flooding. Important facilities like hospitals, schools should be built in safe areas. In urban areas, water holding areas can be created like ponds, lakes or low-lying areas.
- Better coordination among the government agencies which undertake lake and wetlands restoration and protection programmes
- With the help of reforestation, protection of vegetation, clearing of debris from streams and other water holding areas, conservation of ponds and lakes etc. the amount of runoff can be decreased.

4.4. Role of Women in Water Conservation

Women in India travel long distances to fetch fresh water. According to a One India One People report every year each woman living in rural India walks 14,000 km to fetch water. She balances multiple pots and vessels on her head. This in turn affects the health, school attendance of young girls, and has a domino upshot on other development indicators.

Other factors contributing to less participation of women in the water sector include:

- Women travel long distances to collect water due to less availability of water
- Unhygienic and poor sanitation facilities in schools
- Water-borne diseases
- School dropout and low wages due to factors such as long traveling hours to collect water and sanitation.

Women bear the brunt

The challenges that women were facing then with regard to water use, collection and management are now exacerbated by the consequences of climate change. Around the world, women and girls are more often responsible for collection and management of water in the household. According to a UN Women study based on data from 61 countries, in 80% of water-deprived households, women and girls carry the burden of water collection. As water scarcity, heatwaves and droughts become more widespread, women and girls find themselves walking greater distances to fetch water. In many cases, this can affect girls' chances of being enrolled in school as studies have shown that a one-hour time reduction in water collection can increase the rate of girls' school enrolment.

In addition to this, safe and affordable access to sanitation and hygiene for women is still hard to come by. Water, sanitation and hygiene (WASH) are essential to the fulfilment of women's rights as well as their economic and social development. Ensuring safe and widespread access to WASH for women and girls contributes to gender equality and their inclusion in society. This is also critical when talking about menstrual hygiene management, which still carries significant stigma and is considered taboo in many areas around the world. Consequently, until recently, menstrual hygiene was completely overlooked in sanitation policies and programming, further excluding women and girls from public life. In many cases, it means that, during this time, girls have to miss school and women are sometimes forced to stay home, missing out on a day's income.

How do we change the status-quo?

As farmers, community professionals and entrepreneurs in agriculture; we have seen that women are quick to adopt solutions that transform water conservation efforts and judicious use water.

1. **Amplify role of women as 'First Mile' para-professionals:** Build and capacitate large cadres of women para-professionals in water and agriculture to help farmers adopt responsible practices and communities to conserve water. Evangelise large scale adoption of digital tools and content to drive awareness and action on water conservation and water use.
2. **Mainstream women's leadership in water governance:** Support an active role for women in community institutions on water resource planning, implementation and governance. Establish evidence to advocate for larger allocations for women-led initiatives in flagship government programmes.
3. **Equip women farmers to transition from adversity to abundance:** Make targeted interventions for women farmers to overcome barriers of knowledge, resource and markets to achieve higher crop yields and better price realisation. Establish agriculture as a viable enterprise for women farmers; increase their contribution to rural GDP.
4. **Strengthen formal and institutional property rights** to ensure security of access to women
5. **Promote capacity building of women** engaged in agriculture to encourage efficient utilization of water resources in irrigation and farming activities.

Policies and programs must emphasize on gender concerns and improving gender ratios in local governance bodies to encourage an equitable role of women in the conservation of water.

All the best
Team IASbaba 😊



The Guru-shishya Parampara Continues....

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