YOJANA

JANUARY 2025 | A DEVELOPMENT MONTHLY | ₹ 22

75 Years of Constitution

Indian Knowledge Systems

JANUARY 2025

Volume-69
No. 01

YOJANA

Since 1957 A DEVELOPMENT MONTHLY

Let noble thoughts come to us from all sides.
Rig Veda

Yojana (English): Room No. 647, Soochna Bhawan, CGO Complex, Lodhi Road, New Delhi-110 003.
E-mail (Editorial): sec-yojanaeng-moib@gov.in

YOJANA, a development monthly published since 1957, is a theme-based journal providing in-depth analyses and views on socio-economic issues in the broader framework of government policies. Although published by the Ministry of Information and Broadcasting, **YOJANA** is not restricted to expressing the official point of view.

SUBSCRIPTION/GRIEVANCES
Email: pdjucir@gmail.com
Phone: 011-24367453
(Monday-Friday, 9:30 am- 6:00 pm)

Postal Address: Abhishek Chaturvedi, Editor, Journals Unit, Publications Division, Room No. 779, Soochna Bhawan, CGO Complex, Lodhi Road, New Delhi-110 003.

Please note that it will take atleast eight weeks to start your subscription. Kindly raise your queries/ grievances about non receipt of the journals only after this period.

SUBSCRIPTION-RELATED DETAILS : Page 49

IN THIS ISSUE

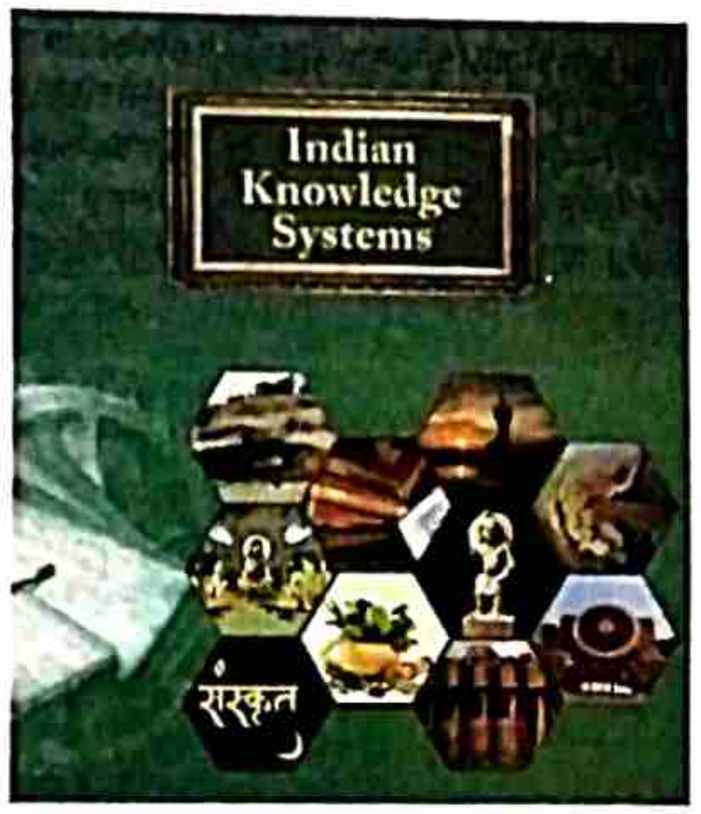
UPCOMING ISSUE : ENERGY SECTOR

For *Inbox* | **Readers may give their feedback & suggestions on email : yojanace@gmail.com**

Number of pages: 60
Details of the Sales Outlets of the Publications Division on Page 19

YOJANA is published in Assamese, Bengali, English, Gujarati, Hindi, Kannada, Malayalam, Marathi, Odia, Punjabi, Tamil, Telugu, and Urdu.

Illuminating the Future: India's Knowledge Legacy



From the ancient Indus Valley Civilisation to the present day, India's intellectual traditions have been characterised by a spirit of curiosity, inquiry, and discovery. For centuries, Indian scholars, scientists, and philosophers have been at the forefront of innovation, pushing the boundaries of human knowledge and understanding.

The illustrious mathematician and astronomer Aryabhata, who flourished in the 5th century CE, made monumental contributions to the realms of mathematics and astronomy. His pioneering work on zero and the decimal system laid the foundation for significant advancements in these disciplines. Aryabhata also proposed the revolutionary idea that the Earth rotates on its axis, a concept far ahead of his time.

Pāṇini, the renowned Sanskrit grammarian, developed the *Ashtadhyayi*, a comprehensive treatise on linguistics that remains unparalleled in its depth and sophistication. Patanjali's *Yoga Sutras*, which date back to the 2nd century BCE, continue to inspire and guide millions of people around the world in their quest for physical, mental, and spiritual well-being.

In the field of medicine, the ancient Indian system of Ayurveda has been recognised by the World Health Organization for its holistic approach to health and wellness. The *Charaka Samhita* and the *Sushruta Samhita*, two seminal texts on Ayurveda, contain valuable insights into human anatomy, physiology, and pharmacology.

India's rich cultural heritage is replete with examples of innovation and excellence. From the intricate metallurgy of the ancient Indians to the sophisticated astronomy of the Jantar Mantar observatories, India's contributions to the world of science, technology, engineering, and mathematics (STEM) are undeniable.

In recent years, the Government of India has taken significant steps to promote and preserve India's knowledge systems, rekindling a sense of pride and cultural appreciation. The repatriation of antiquities has played a crucial role in this resurgence, with notable returns from countries like the USA, UK, and Australia. These efforts have not only helped reclaim India's lost heritage but have also bolstered a renewed pride in the country's ancient culture. Furthermore, the setting up of Centres of Excellence for Indian Knowledge Systems in several IITs is a far-reaching initiative that aims to promote interdisciplinary research and innovation in areas such as Ayurveda, Yoga, and traditional Indian mathematics. These initiatives are fostering a deeper connection to our rich intellectual heritage and inspiring a new era of cultural pride and innovation.

The government's initiatives to promote Ayurveda, Yoga, and other traditional systems of medicine have also yielded impressive results. The establishment of the All India Institute of Ayurveda has helped to standardise and popularise these ancient systems of healing. Additionally, the establishment of the Ministry of Ayush on 9 November 2014, has significantly promoted traditional Indian systems of medicine. The Ministry has standardised and popularised Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homoeopathy, leading to their greater acceptance and integration into mainstream healthcare. Furthermore, the government's efforts to take Yoga to the global stage have borne fruit, with the United Nations declaring June 21 as International Yoga Day in 2014, a testament to India's enduring legacy in the realm of wellness and spirituality.

As we move forward in this rapidly changing world, it is essential that we draw upon India's rich intellectual heritage to inform and inspire our endeavours. By embracing our past and building upon the achievements of our ancestors, we can create a brighter, more sustainable future for ourselves and for generations to come.

The current edition of Yojana is an effort to facilitate the assimilation of a compendium of articles by subject matter experts and researchers, highlighting the significance of India's knowledge systems and their potential to contribute to the country's growth and development. As we unlock the treasures of our rich intellectual heritage, may we ignite a new era of innovation, discovery, and progress, illuminating the path to a brighter future for all. ❑

Historical Perspectives on Indian Knowledge System

UDAY SHANKER DIXIT | The author is the Head of the Centre for Indian Knowledge Systems at the Indian Institute of Technology, Guwahati, Assam.
Email: uday@iitg.ac.in

'Indian Knowledge' is largely based on tradition. From the dawn of human civilisation, the traditions kept passing on from generation to generation in a continuous manner, which makes the Indian civilisation the world's oldest living civilisation. At the same time, reforms in traditions have also been going on, and 'Indian Knowledge' has been evolving. The revival and adaptation of the Indian Knowledge System is crucial for preserving the rich intellectual heritage of the nation while aligning it with the demands of modern society. The National Education Policy (NEP) 2020 has provided a comprehensive framework that encourages the inclusion of IKS in the educational curriculum, highlighting its importance in fostering a holistic and inclusive approach to learning.

In October 2020, the Ministry of Education of the Government of India established a division called Indian Knowledge Systems (IKS), with its headquarters at AICTE (All India Council for Technical Education) in New Delhi. This was followed by the setting up of a number of centres of IKS at various institutes. It is pertinent to understand what constitutes the IKS. Nowadays, the entire world has become a global village and Indians are contributing to all forms of knowledge. However, there is something unique with the term 'Indian Knowledge', which connotes the continuous flow of knowledge in the Indian subcontinent since times immemorial. The unique feature is that 'Indian Knowledge' aims for the holistic development of a person to make her/him fit for materialistic as well as spiritual life. *Vishnu*

Purana says *'Sā vidyā yā vimuktaye,'* thus defining the purpose of knowledge as liberation (from sufferings and bondage). In the *Ishavasyopanishad*, spiritual knowledge has been named *Vidyā*, while the materialistic knowledge is called *Avidyā*. Here, word *Avidyā* is used as a counterpart of *Vidyā*. As per the philosophy of *Upanishads*, the materialistic world is not real, and thus the knowledge of materialistic, though important, is not the *Vidyā*. However, having named the materialistic knowledge as *Avidyā*, *Ishavasyopanishad* strongly advocates for learning both, *Vidyā* and *Avidyā*. It stresses that knowledge of only one form is dangerous, but it is more dangerous to focus on spiritual knowledge by ignoring the materialistic knowledge. It suggests that humans should lead a happy worldly life with the help of materialistic knowledge and attain immortal place with the help of spiritual knowledge. *Mundaka Upanishad* calls *Vidyā* as *Parā Vidyā* and *Avidyā* as *Aparā Vidyā*.

'Indian Knowledge' is largely based on tradition. From the dawn of human civilisation, the traditions kept passing on from generation to generation in a continuous manner, which makes the Indian civilisation the world's oldest living civilisation. At the same time, reforms in traditions have also been going on, and 'Indian Knowledge' has been evolving. Ancient Indians did not rely only on the documented form of the knowledge. In the realm of documented knowledge, the *Vedas* are the oldest text of knowledge. In Sanskrit, *Veda* means 'knowledge'. Thus, ideally, any knowledge is a part of *Veda*. However, in scholarly terms, the knowledge of *Veda* has been documented in the form of four Vedas—*Rigveda, Yajurveda, Sāmaveda* and *Atharvaveda*. There are also four *Upvedas*—*Āyurveda* (study of medicine), *Dhanurveda* (study of archery and warfare), *Gāndharvaveda* (study of performing arts) and *Shilpaveda* (study of architecture). *Vedas* comprise philosophical as well as practical knowledge. *Upanishads* focus on the philosophical teachings. In order to explain the concept of *Vedas* in simple language, *Puranas* have been written. They have five characteristics, *viz.*, the creation of the universe, its destruction and renovation, the genealogy of gods as well as patriarchs, the reigns of the *Manus* forming the periods called *manvantaras,* and the history of the races of kings. There are 18 *Puranas* and 18 *Upapuranas* from *Vedic* tradition and three *Puranas* from Jain tradition.

There are many interesting forms of knowledge in *Purana* that include medicine, yoga, music, mathematics and a model code of conduct. Besides, there are seeds of deep philosophical scientific thoughts in the form of stories. As an example, the *Brahmavaivarta Purana* contains an interesting story of *Revati*. *Revati* and her father, King *Kakudmi*, went to meet Lord *Brahma* in *Brahmalok* to find a suitable match for *Revati*. When they arrived, *Brahma* was listening to a musical performance by the *Gandharvas* and *Kakudmi* had to wait. After the performance, King *Kakudmi* explained his purpose to him. *Brahma* laughed and told him that during the brief time they had spent in *Brahmaloka*, millions of years had passed on Earth. A new age (*Dwapara Yuga*) had begun. Lord *Brahma* suggested that *Revati* should marry *Balarama*, the brother of Lord *Krishna*. Returning to Earth, *Kakudmi* and *Revati* found it greatly changed. As per *Brahma's* advice, *Revati* was married to *Balarama*. This story indicates that for Indian philosophers, the time was not an absolute entity; it was something similar to the theory of relativity of Einstein.

As per the philosophy of Upanishads, the materialistic world is not real, and thus the knowledge of materialistic, though important, is not the Vidyā. However, having named the materialistic knowledge as *Avidyā*, *Ishavasyopanishad* strongly advocates for learning both, *Vidyā* and *Avidyā*.

'Indian Knowledge' has become more relevant in modern times, considering worldwide non-sustainable development going on for several years. Since 2015, June 21 is celebrated as International Yoga Day with a motto of physical and mental wellbeing of humans. Farmers are moving towards organic farming, realising the drawbacks of pesticides. There is a renewed interest in herbal medicines and a luxury-free lifestyle. Traditional building design is also getting prominence.

It is very difficult to assign timelines to *Vedic* civilisation. The knowledge of *Veda* was transmitted orally from one generation to another. As per the *Yuga* system of *Purana*, *Kaliyuga* started at 3102 BCE. Before it, there was *Dwapara yuga*, which lasted for 8,64,000 years; before that, there was *Treta yuga* of 1,296,000 years and *Satya yuga* of 1,728,000 years. Thus, contrary to modern historians' viewpoint, *Vedic* civilisation is not thousands of years old, but it is millions of years old. As per modern historians, *Vedic* civilisation started around 1500 BCE, while Indus Valley civilisation started around 3300 BCE. Several modern historians consider Indus Valley civilisation as a pre-*Vedic* civilisation, which is being debated.

Ayurveda, meaning the 'science of life' is based on the concept of balancing bodily elements through diet, lifestyle and herbal treatments. Texts like the *Charaka Samhita*, and *Sushruta Samhita* discuss various aspects of anatomy, pathology and disease management. *Sushruta* known as the 'Father of Surgery' described procedures such as cataract surgery.

Puranas were documented during the 4th century BCE to 11th century CE. With the introduction of the education policy of the British, study of *Puranas* declined. As a result, there are some misconceptions due to incomplete and imprecise knowledge. For example, *Puranas* do talk about the *Varna* system. However, it is based on work. The work has been classified as education, security, business and service. It is mentioned that in different islands, four *varnas*, viz., *Brahman, Kshatriya, Vaishya* and *Shudra* are called by different names. As per *Kurma Purana*, in Laksh Dweep, they are named Aryak, Kurav, Vidash and Bhavi, respectively. Similarly, in Kush Dweep, they are called Dravid, Shushiman, Sneh and Mandeh, respectively. This indicates that the writers of the *Puranas* tried to document the sociological structure of the entire world in an objective manner.

Ramayana and *Mahabharata* are called *Itihas Granth*, i.e., the books of history. *Bhagwat Gita* is the part of *Mahabharata*, whose original name was *Jaya-Samhita*. There have been several parallel schools that differ with *Vedic* civilisation and did not believe in fire rituals. Two prominent paths are Jainism and Buddhism. Modern historians often quote that Jainism was started by *Vardhaman Mahavira* (circa 599 BCE–527 BCE). However, Jain tradition does not subscribe to this idea. According to it, *Jainism* is as old as Vedic civilisation. *Mahavira* was its 24th *Tirthankar*. The first *Tirthankar*, *Rishabh Dev*, had a son named *Bharat*, after whom this nation is named. The 22nd *Tirthankar*, *Neminath*, was cousin of *Krishna*. Similarly, Buddhism is also very old, although as per modern historians it was founded by *Gautama Buddha* (circa 563 BCE–483 BCE). Both Jainism and Buddhism have a major share in Indian knowledge systems. Apart from this, there are a number of other streams of knowledge.

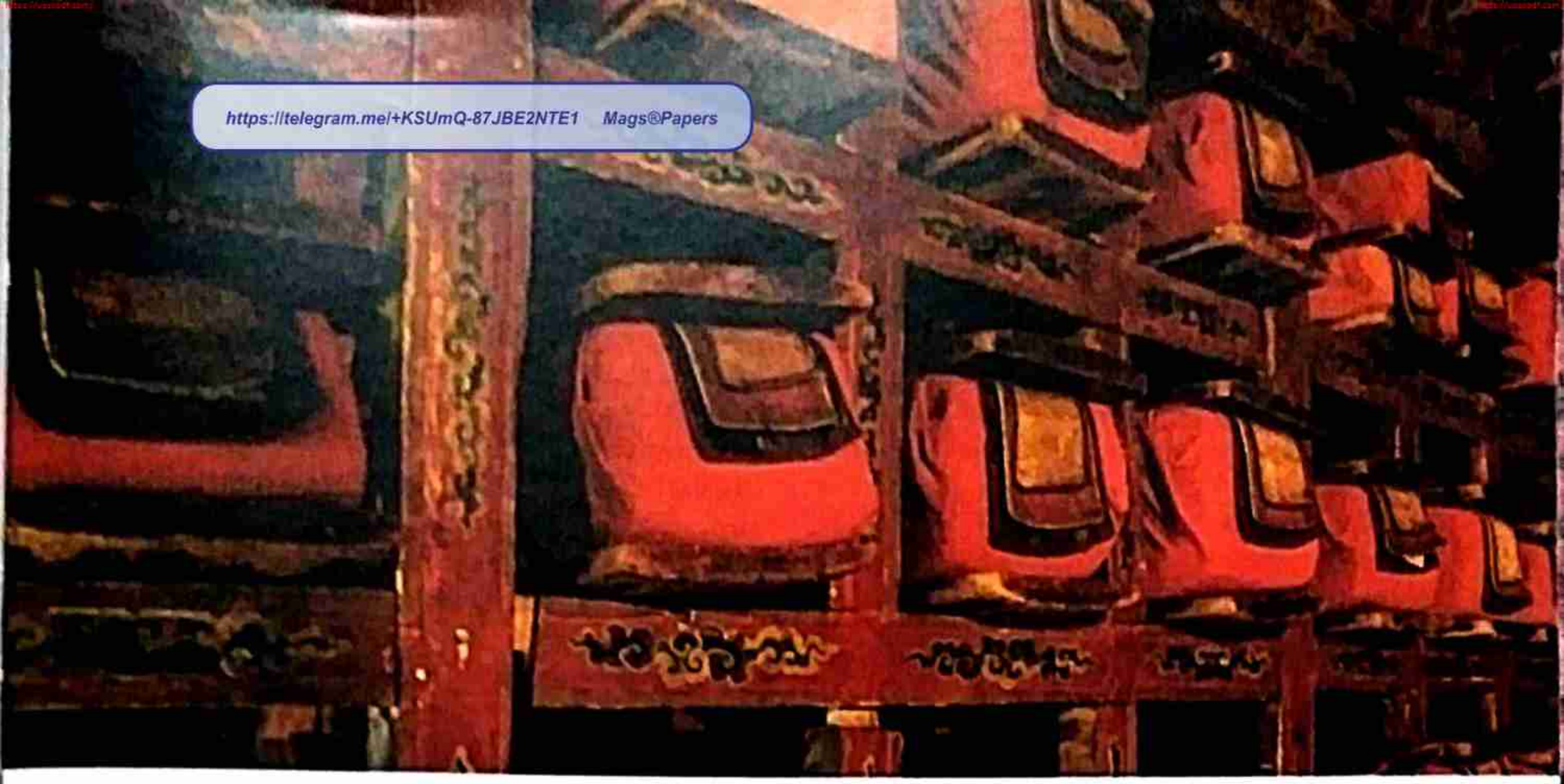
In the historical period, we see a lot of work on mathematics and astronomy. Some famous mathematicians and astronomers are *Baudhyana* (fl. c. 800–700 BCE), *Manava* (fl. c. 750–650 BCE), *Apastamba* (fl. c. 600–500 BCE), *Pāṇini* (c. 520–460 BCE), *Katyayana* (fl. c. 300–200 BCE), *Bharat Muni* (c. 400–200 BCE), *Aryabhata* (476–550 CE), *Varahamihira* (505–587 CE) and *Parameshvara* (c. 1360–1455 CE). We must also include the name of Ramanujan (1887–1920) in this list, who developed many theorems in mathematics and was a great believer in Indian philosophy and tradition.

The IKS in medicine, primarily represented by Ayurveda, is one of the oldest and most holistic approaches to health. Ayurveda, meaning the 'science of life' is based on the concept of balancing bodily elements through diet, lifestyle and herbal treatments. Texts like the *Charaka Samhita*, and *Sushruta Samhita* discuss various aspects of anatomy, pathology and disease management. *Sushruta* known as the 'Father of Surgery' described procedures such as cataract surgery. *Siddha* system originated in Tamil Nadu. This system is another Indian health practice that focuses on maintaining harmony between the body, mind and spirit. It emphasises on the use of herbs and minerals. The '*Natya Shastra*' by *Bharat Muni* is a comprehensive treatise on performing arts,

covering dance, drama and music. It introduces the concepts of art, sculptures, paintings and temple architecture that reflect religious themes and metaphorical concepts.

A lot of 'Indian Knowledge' is available within specific communities and tribes. It is to be emphasised that only Sanskrit-based texts are not the entire source of IKS. Indian has a variety of languages including Indo-Tibetan languages, which are alive in Assam and other states of the Northeast part of India. In recorded history, Assam was renowned for its brass and bronze casting and metalworking techniques, particularly in areas like Hajo and Sarthebari, while Sualkuchi became famous for weaving on Muga silk. Similarly, the ceramic traditions in Ambari, Guwahati, are among India's oldest. Iron and ceramic technologies of Shillong, Meghalaya, are estimated to be over 3,000 years old. Unfortunately, there is limited documentation of the manufacturing heritage of eastern and north-eastern India.

The revival and adaptation of the Indian Knowledge System is crucial for preserving the rich intellectual heritage of the nation while aligning it with the demands of modern society. The National Education Policy (NEP) 2020 has provided a comprehensive framework that encourages the inclusion of IKS in the educational curriculum, highlighting its importance in fostering a holistic and inclusive approach to learning. This policy offers a unique opportunity to integrate traditional wisdom with contemporary scientific and technological advancements. To ensure the relevance of IKS, it is essential that educational institutions collaborate with scholars and practitioners to adapt ancient knowledge systems in ways that address present-day challenges. The process of revival must go beyond theoretical discussions and include practical efforts to document and preserve the vast body of knowledge that exists in various forms, such as texts, oral traditions, rituals, and local practices. Significant research must be conducted to catalogue this knowledge and make it accessible to future generations. Moreover, interdisciplinary approaches are needed to explore how IKS can contribute to fields like sustainable development, healthcare, agriculture, and technology. The government, academic institutions, and local communities should work together to ensure that the revival of IKS is a collaborative and ongoing effort that benefits all sections of society. ❑



Decolonisation of the Mind through the Indian Knowledge System

DR MANISH KARMWAR | The author is a faculty member in the Department of African Studies at the University of Delhi. Email. mkarmwar@as.du.ac.in

The process of decolonising the mind, as articulated by Ngũgĩ wa Thiong'o in his work 'Decolonising the Mind,' encompasses reclaiming cultural and intellectual autonomy. In the Indian context, scholars advocate for a revival of the Indian Knowledge Systems (IKS) to promote self-reliance and national identity. This article explores the integration of IKS within the decolonisation agenda, emphasising the necessity of contextualising traditional knowledge systems in the framework of contemporary global discourse.

India, that is *Bharat*, is the epitome of the term '*Gyan-Bhoomi*,' the land of knowledge. This identity arises not only from the proliferation and emergence of remarkable arts, architecture, astronomy, science, medicine (Ayurveda), languages, literature, philosophy, and engineering but also from the presence of knowledge texts such as Vedic literature, the *Vedas*, the *Upanishads*, and the *Upvedas* and distinctive systems that have guided India from ancient times to the present day. The Indian knowledge system represents a systematic transmission of knowledge across generations. It is imperative to emphasise that the Indian knowledge system constitutes a structured framework and a process of knowledge transfer rather than merely a tradition.

The Indian Knowledge System (IKS) has historically provided comprehensive approaches to comprehending life, society, and the cosmos through an extensive range of disciplines. From Ayurveda and Yoga to the philosophical insights of *Vedanta* and *Nyaya*, IKS exemplifies a pluralistic tradition anchored in sustainability and harmony. With the onset of colonial rule, these traditions were systematically marginalised. Colonial education policies, as epitomised by Macaulay's 'Minute on Education' (1835), endeavoured to supplant indigenous knowledge systems with Eurocentric paradigms, thereby alienating generations of Indians from their intellectual heritage.

The purpose of studying IKS is to broaden individuals' perspectives towards alternative methods of inquiry and questioning. It aims to transform attitudes regarding knowledge and to restructure the organisation of scientific thought. Ultimately, it seeks to develop a globalised approach to thinking about knowledge traditions.

The Indian Knowledge System through the ages

Since the ancient period, India has encountered numerous powers that sought to exploit its prosperous economy and undermine its rich cultural ethos, philosophical traditions, and belief systems. Spanning the eras from ancient to medieval to modern times, India has successfully preserved its cultural heritage, knowledge frameworks, and value systems.

The *Upanishads*, integral to Indian philosophy, explore the essence of the Self (*Atman*) as distinct from mental and physical states. They present two pathways: *nivrtti* (detached self-knowledge) and *pravrtti* (engaged action). *Advaita Vedanta*, known for its monism, posits that the individual Self and *Brahman* are identical, viewing the empirical world as *Maya* (illusion). Similarly, *Bhatta Mimamsa* explores the transformative yet eternal nature of the 'self', likening it to gold's malleability. Jainism and Buddhism also contribute to this discourse, with Jainism's dualism of *jiva* and *ajiva* and Buddhism's rejection of a permanent 'self' while maintaining moral responsibility through karma and rebirth.

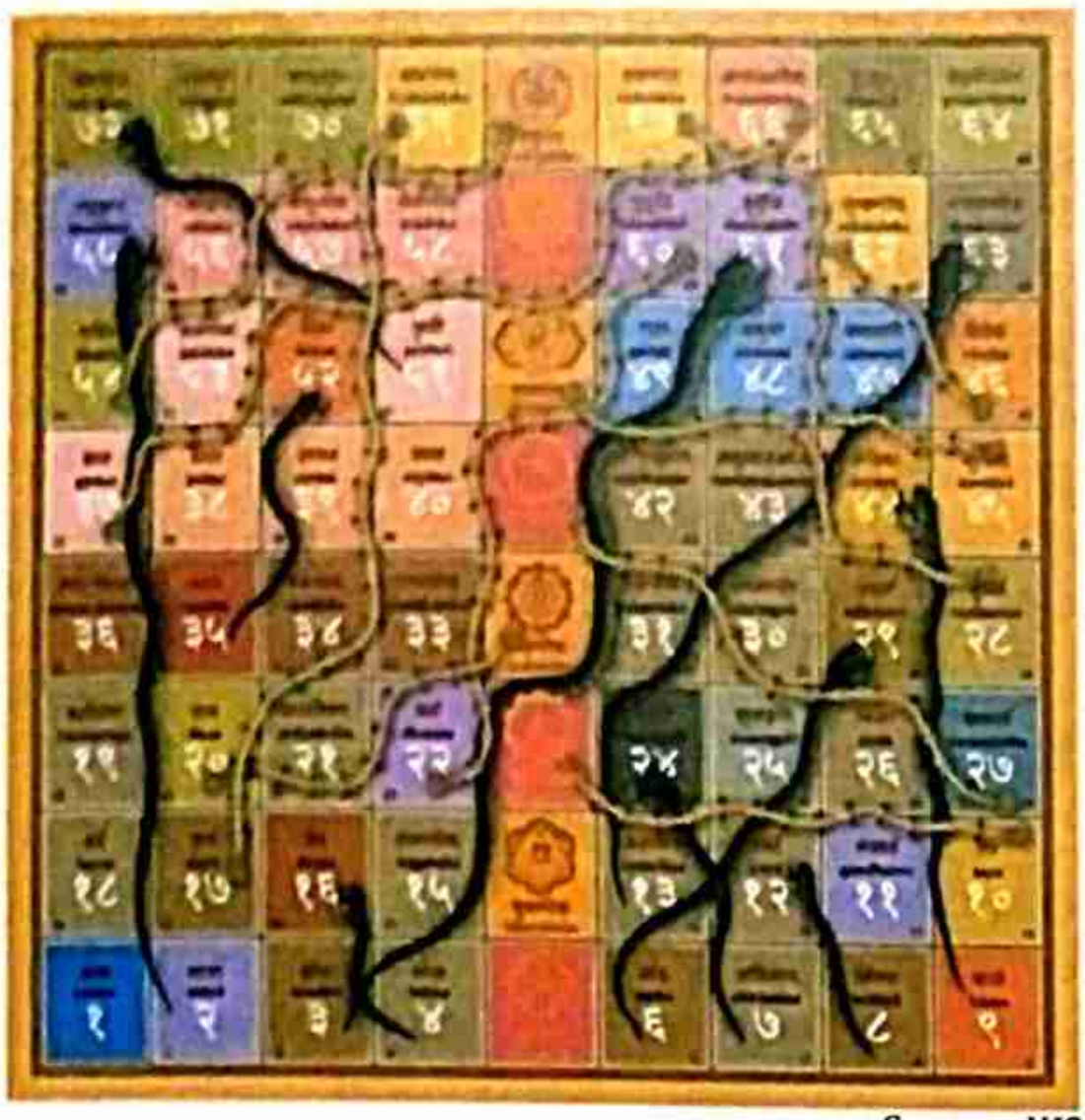
In medieval India, the *Bhakti* movement marked a philosophical transformation rooted in devotion (*bhakti*) and emphasising equality. It spanned southern India (7th-12th centuries) and northern regions (12th-17th centuries). Saints like Sri Goswami Tulsidas, Sri Chaitanya Mahaprabhu, Sri Guru Nanak Dev, and Sri Kabir Das, through *Saguna* and *Nirguna* traditions, promoted singular devotion and love for the divine, advocating liberation through faith and devotion. The movement underscored the importance of vernacular languages and universal brotherhood. The sages of this period underscored the value and significance of *gurus*, who served as guides and preceptors while promoting the principle of universal brotherhood.

During the modern period, contemporary philosophers such as Swami Vivekananda, Sri Aurobindo, and Sarvepalli Radhakrishnan significantly underscored the essence of the Indian knowledge tradition. Vivekananda advocated for the principles of rationality, education, and universal religion, which he defined as 'humanism'. Furthermore, they view the values of truth and service as fundamental tenets of life. The development of the individual holds paramount significance, necessitating purity in thought, speech, and action. Vivekananda's philosophical framework is based on the idea that every soul possesses inherent divinity, which can be realised through self-effort, disciplined training, and appropriate educational guidance. Similarly, Sri Aurobindo's philosophy proposes a synthesis of idealism, realism, naturalism, and pragmatism. He argues that spirituality, creativity, and intellectuality are essential components for cultivating a sound personality. In seeking a divine path, knowledge, devotion, and a strong work ethic are three critical elements that can lead an individual toward spiritual fulfilment. Sarvepalli Radhakrishnan's philosophy is rooted in *Advaita Vedanta*, a non-dualistic tradition of Indian philosophy. He believed in the principles of organic unity, truth, and the diversity of human nature.

Thus, the IKS represents a dynamic and evolving cultural framework and tradition that has consistently adapted to different historical eras while maintaining its core ideas and principles. Its components underscore the essential relationship between the mind, body, and spirit. The system recognises and preserves cultural identity, promotes intercultural communication, and enriches global perspectives across various domains. It demonstrates a comprehensive perspective that encompasses the pursuit of material and spiritual well-being and recognises the interdependence of all elements.

Decolonisation of the mind and the Indian Knowledge System

During the modern period, the process of colonisation, while exhibiting variations among different colonisers and colonised populations globally, is widely recognised as encompassing several universal stages and fundamental principles. These principles include the appropriation of land and resources, cultivation for colonial enterprises, and the systematic dismantling of indigenous cultures and traditions. When colonial forces exerted control over Indian territories, they not only devastated India's economy but also imposed a colonial mindset upon the Indian population through various means, including interference in the Indian education system, traditions, administration, architecture, and cultural practices. Consequently, post-colonial India has undergone significant cultural hybridity, in which traditional values and western knowledge systems and lifestyles have intersected and mutually influenced one another. This synthesis is particularly evident in various domains such as art, literature, philosophy, and more. The most profound consequence of colonisation transpired within the realm of consciousness. The central question that persists within our discourse is the assertion that India attained independence in 1947. After that, some efforts have been made to understand the economic impact of colonisation, mainly British colonisation. Still, the remnants of the colonial mindset have not entirely dissipated from the consciousness of the Indian populace, a phenomenon which Edward Said referred to as 'Orientalism.' According to Said, "Orientalism served as an ideological foundation for colonial rule. Yet, Orientalist perceptions did not simply vanish following the colonial era." Additionally, Said underscores that Orientalism perpetuates its influence through repetition. The notions,



Source : IKS

stereotypes, and methodologies associated with Orientalism have been revived and reiterated over the past two centuries, and these remnants persist in circulation today. Similarly, Frantz Fanon's 'colonial alienation' highlighted the discord imposed by western paradigms, necessitating a revival of indigenous knowledge and heritage.

Further, nationalist intellectuals such as Douglas Hyde, Patrick Pearse, and John Lorne Campbell have promoted the decolonisation of political, cultural, literary, and linguistic spheres. They have condemned the colonial mentality as a profound challenge within their respective communities. As a solution, they advocate for the advancement of heritage language education and cultural nationalism, which entails a synthesis aimed at revitalising the most commendable elements of pre-colonial heritage.

The concept of the colonisation of the mind, along with the enduring impact of colonialism on cultural practices, knowledge structures, histories, and various other cultural forms, is articulated in unequivocal terms. It pertains to the internalised perception of ethnic or cultural inferiority experienced by individuals from formerly colonised societies. This perception is deeply rooted in the conviction that the cultural values upheld by the colonisers possess an intrinsic superiority over those of one's own culture. Consequently, it is essential to decolonise the mind to restore the significance of indigenous knowledge.

Decolonising the mind involves restoring the significance of indigenous knowledge. Indian philosophy places great importance on the mind (*manas*) as a means to comprehend consciousness and realise truth. Understanding the Self (*atman*) fosters individual well-being (*sukha*) and ultimate liberation (*moksha*). Indian traditions like *Samkhya*, *Nyaya*, and *Vedanta* provide frameworks for understanding morality and existence, emphasising the interplay between mind, body, and spirit. Indian philosophical inquiry arose from addressing life's evils and pursuing liberation from suffering (*samsara*). Most schools of thought, except the *Carvaka* materialists, focused on attaining liberation (*Moksha* or *Nirvana*) by overcoming ignorance about the true self.

Colonial intervention in India's education system, exemplified by institutions like the Calcutta Madrasah (1781) and Sanskrit College (1791), sought to mould Indians into compliant administrators. By imposing western education, the colonial powers distorted India's social fabric, fostering a sense of inferiority and severing connections with indigenous traditions. They instilled in Indians a perception of their perceived inferiority to the West in terms of civilisation, knowledge, and culture.

The proponents of certain cultures and knowledge systems have posited their own as universal while deeming the knowledge and culture of India as inferior. A notable illustration of this is the characterisation of the esteemed ancient Indian philosopher and mathematician Nagarjuna as the 'Einstein of India,' despite Einstein being born approximately 1,600 years after Nagarjuna. Likewise, Chanakya has been referred to as the 'Machiavelli of India,' although Machiavelli was born many centuries after Chanakya. Colonial powers have perpetuated this narrative as part of an orchestrated effort to portray Indian philosophy, tradition, and literature as inferior. Consequently, in the present day, as India strives to re-establish its presence on the global stage akin to its ancient legacy, it is imperative for the Indian populace to extricate themselves from the vestiges of colonial mental subjugation and reconnect with their cultural roots. Historically, India has been the pioneer of philosophical thought, with a rich tradition spanning from ancient to contemporary times, encompassing the *Vedas, Upanishads, Samkhya,*

Yoga, Mimansa, as well as Jainism and Buddhism, culminating in the *Bhakti* philosophical tradition and the contributions of the modern thinkers like Swami Vivekananda, Sri Aurobindo, Sarvepalli Radhakrishnan, in modern times. Central to these teachings is the contemplation of human self-improvement, various pathways of self-discovery, and the quest for a divine connection.

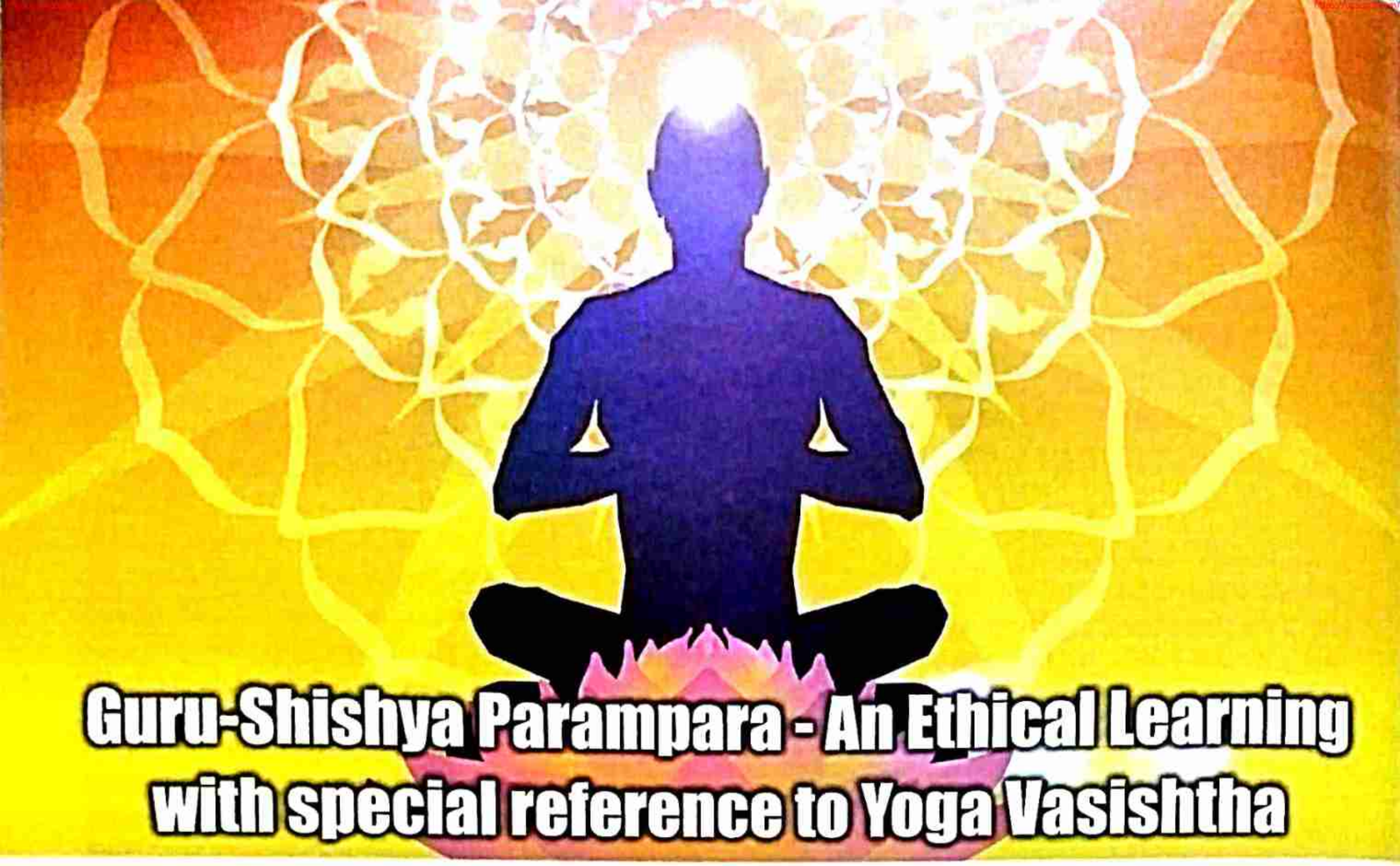
These philosophical traditions have engaged with the concepts of liberation from suffering and the true meaning of existence. Alongside these philosophical dimensions, the Indian knowledge tradition has consistently emphasised sustainability and equality for all. It has also encompassed reflections on various aspects of life, including environmental stewardship; each village's management of forests and trees involved a meticulous methodology for the sustainable harvesting of medicinal plants, firewood, and building materials aligned with the rates of natural renewal. The local populations exhibited a high level of sophistication in their management practices and ecology. The significance of the rural economy: India's agricultural output has historically been significant and, when compared to other regions worldwide, has effectively supported a large population. Surpluses were carefully stored for use during times of drought. Within India's indigenous education system and skill development practices, numerous indigenous Indian industries flourished, and India's manufactured goods were valued worldwide. It is essential to evaluate the historical significance of these IKS concerning their economic value during the time when their importance can be compared to today's high-tech industry. Holistic systems such as Ayurveda and Yoga for disease prevention and rigorous scholarly inquiry in fields like science and mathematics. In addition to numerous scientific advancements, Indian scholars cultivated advanced mathematical concepts, including the invention of zero and the base-ten decimal system, which is currently utilised globally. They also achieved significant astronomical discoveries. Various schools of logic and philosophy flourished during this period. Pāṇini of India is recognised as the father of linguistics, and his Sanskrit grammar remains the most comprehensive and sophisticated among all languages worldwide.

Within the Indian epistemological framework, the notion of self-existence has maintained its paramount importance. In today's global era, it is essential to recognise that the entire world is inundated with information but lacking in knowledge. The world is turning into a racetrack where everyone strives to move forward without understanding what they are racing towards or why. Each individual believes they are enjoying freedom, yet the reality is that all are prisoners of an illusory world devoid of certain things or paths that could liberate them from suffering. The world is transforming into an illusion; aside from a few things, we struggle to find permanent solutions for anything. Consequently, we are confronted with challenges such as environmental issues, climate change, hunger, and pandemics, and whatever we accomplish often comes at the expense of human lives. This clearly illustrates that humanity is returning to its origins. In this context, it is crucial to acknowledge our roots and guide the world as India has traditionally done since ancient times. Therefore, in these changing times, it is paramount that Indians liberate themselves from mental colonisation to achieve their own existence. To this end, it is vital to adhere to the Indian knowledge tradition, which encompasses all the necessary elements for realising the self and provides solutions for every aspect of human life and experience. ❑

(The co-author, Abhash Kumar Saurav, is a PhD Research Scholar at the University of Delhi.)

References

1. Radhakrishnan, S. (1927). The Hindu View Of Life. London: George Allen & Unwin.
2. Hiriyanna. M. (1932). Outlines of Indian Philosophy. New Delhi: Motilal Banarsidass.
3. Basham, A.L. (1954). The wonder that was India. United Kingdom: Sidgwick & Jackson.
4. Dinkar, R.S. (1956). Sanskriti Ke Char Adhyay. New Delhi: Sahitya Akademi.
5. Fanon, F. (1963). The Wretched of the Earth. New York: Grove Press.
6. Said, A. (1978). Orientalism. New York: Pantheon Books.
7. Thiong'o. N.W. (1986). Decolonising the Mind. Zimbabwe: Zimbabwe Publishing House.
8. Kapoor, K. (1994). Language, Linguistics, and Literature, the Indian Perspective. New Delhi: Academic Foundation.
9. Chattopadhyaya, D.P. (1999). The History of Science, Philosophy and Culture in Indian Civilization. New Delhi: Pearson.
10. Sen, A. (2005). The Argumentative Indian. London: Allen Lane.



Guru-Shishya Parampara - An Ethical Learning with special reference to Yoga Vasishtha

PRANABJYOTI DAS

The author is associated with Department of Yogic Science and Naturopathy, Mahapurusha Srimanta Sankardeva Viswavidyalaya, Guwahati, Assam. Email: daspranabjyoti995@gmail.com

In Indian culture, the Guru-Shishya parampara is an ancient tradition in which the Guru imparts knowledge to the Shishya, and it is rooted in the Vedic period. The Rig Veda describes the Guru as the 'source and inspirer of the knowledge of the self, the building blocks of personal development.' The relationship between a Guru and his Shishya is akin to that of a mother and her unborn child. The true meaning of Guru is 'one who dispels the darkness of ignorance.' 'Gu' signifies the darkness of ignorance, while 'Ru' means one who removes it. The term 'Guru-Shishya Parampara' can be simplified as follows: 'Guru' means teacher, 'Shishya' means student, and 'Parampara' signifies tradition. Also, Ethics is the study of moral principles that help distinguish between good and bad behaviour, enabling individuals to discern right from wrong and make decisions that reflect their values. Learning is the process of acquiring knowledge, skills, attitudes, or competencies through study, experience, or instruction. Ethical learning involves understanding and applying ethical principles in various contexts, such as personal decision-making, professional conduct, and societal issues. It encourages critical thinking about moral dilemmas, fosters empathy towards others, and considers the consequences of action.

The origins of the *Guru-Shishya parampara* can be traced back to the *Vedic* period (1500–500 BCE) in ancient India, where it was first documented in the *Vedas*, the oldest and most revered scriptures of Hinduism. The *Vedas* played a foundational role in the cultural, spiritual, and intellectual development of ancient Indian society. During this time, knowledge was primarily transmitted orally, with learning taking place in *Ashramas* and *Gurukulas* under the direct supervision of a *Guru*. *Shishya* lived with their *guru* in these *gurukulas*, learning not only the *Vedic* texts but also practical life skills such as humility, discipline, self-control, and service to the community. This method of teaching, known as 'Shruti,' means 'that which is heard.' Disciples learnt by listening to their *guru* and through the repeated recitation of hymns, *mantras*, and verses. This oral tradition ensured the preservation and continuity of knowledge across generations, despite the absence of a written script. The *Mahabharata* and the *Ramayana* feature numerous examples of the *Guru-Shishya* tradition, highlighting its significance in the moral and spiritual fabric of society. Over time, the tradition adapted to societal changes and philosophical developments, evolving into various forms and continuing to profoundly influence Indian culture and education.

The Guru in Hinduism: A Guide to Spiritual Enlightenment and Cultural Heritage

The traditional concept of the *guru* holds a unique place in the cultural heritage of Hinduism. A guru serves as a dispeller of ignorance, guiding others on their spiritual journeys toward *moksha*. Historically, gurus were individuals who attained spiritual enlightenment and felt a deep responsibility to mentor others. In their earliest roles, *gurus* taught the *Vedas'* essential skills such as grammar and etymology, with knowledge being transmitted orally. In ancient India, students ideally lived within the *Gurukula*, the extended family of the *guru*, as great emphasis was placed on association and imitation in the learning process. The *Yajur Veda* (VII, 27) describes the guru as one who blesses and enriches the spiritual lives of seekers. The historical evolution of the *guru-shishya* relationship saw significant development during the era of *bhakti* schools, where disciples came to understand that God and guru are the same. In contemporary society, the role of the guru extends beyond that of a mere spiritual guide to his *shishyas*, encompassing a broader influence in various aspects of life.

Overview of *Yoga Vasishtha*

The *Yoga Vasishtha* is a classical Indian text that is considered one of the most important scriptures. It is also known as the '*Maharamayana*', '*Arsha Ramayana*', and '*Vasishtha Ramayana*'. *Yoga Vasishtha* meticulously interweaves poetical expressions with narrations, conversations, and self-reflective writings. The text is structured as a dialogue between the Sage *Vashishta* and his disciple, *Sri Rama*. *Vasishtha* imparts teachings on the nature of reality, the mind, and the self, emphasising experiential knowledge rather than theoretical understanding. *Sri Rama*, as the seeker, raises profound questions about the nature of suffering, existence, liberation, and the universe. *Vasishtha* responds with stories, parables, and analogies, using the question-and-answer format to elucidate deep philosophical truths. *Vasishtha* gives the knowledge of *Nirguna Brahma* to *Sri Rama*. This scripture is unique because it focuses not on ritual or dogma but on the philosophical teachings and practices of self-inquiry, meditation, and the nature of reality.

At the age of 15, *Sri Rama* went on a prolonged tour of the country to gain practical insights into the everyday lives of the nation's citizens, as well as the general administrative structure and practices. He visited all the holy places and returned to Ayodhya. After experiencing the apparent reality of the world during his travels, *Sri Rama* became utterly disillusioned. Upon returning to Ayodhya, Prince *Rama* was completely changed. After that, *Vasishtha* guided *Sri Rama* through the process of enlightenment, using several fantastic stories as a medium. The central teaching of the *Yoga Vasishtha* is the attainment of liberation (*moksha*) through self-inquiry and knowledge (*jnana*).

Here are some ways Sage *Vasishtha* provided enlightenment to *Sri Rama* and how *Sri Rama* became *Maryada Purushottama*

ENLIGHTENMENT THROUGH GUIDANCE (The transformative relationship between Sri Rama and Sage Vasishtha)

The relationship between a *Guru* and a disciple is very important because a *Guru* cannot exist without a disciple, and a disciple cannot become one

without a *Guru*. Sage *Vasishtha* serves as a spiritual guide to *Sri Rama* and helps him navigate challenges on their path to enlightenment. *Vasishtha's* teachings emphasise duty, righteousness, and inner strength, helping *Sri Rama* navigate his challenges. *Sage Vasishtha* imparted such profound knowledge to *Sri Rama* that he transformed him into one of the most dignified individuals.

THE ESSENCE OF THE GURU (Faith, wisdom and the path to Enlightenment)

A *guru* was not only a teacher but also a spiritual guide who embodied wisdom and enlightenment. Faith was not the result of external observances; it arose from constant inner awareness—not of the senses or the turbulence of the mind, but rather as a quality of consciousness. Faith represented an internal belief and served as the foremost quality of a disciple, forming the foundation upon which the *guru-disciple* relationship was built. *Sri Rama's* faith in his guru exemplified this principle. Vasishtha's wisdom and guidance provided *Sri Rama* with the moral and ethical framework necessary for his future as a leader and an embodiment of *dharma* (*Yoga Vasishtha*, Verse 7.216.26).

GUIDED BY WISDOM (Sri Rama's spiritual journey with Sage Vasishtha)

Sri Rama's journey toward self-realisation was profoundly influenced by his *guru*, Sage *Vasishtha*. He encouraged *Sri Rama* to look beyond the material world and recognise the impermanence of life and imparted invaluable wisdom that guided *Sri Rama* in understanding his true nature and purpose. Through insightful teachings and philosophical discussions, *Vasishtha* helped *Sri Rama* explore essential concepts such as *dharma*, righteousness, and the essence of the self. This guidance enabled *Sri Rama* to cultivate a deep sense of detachment from worldly desires, paving the way for his spiritual growth.

DOWN TO EARTH WISDOM (Sage Vasishtha's Teachings on Life and Non-Dual Awareness)

Sage *Vasishtha* shared stories and parables to illustrate profound truths, making his teachings accessible to all. These narratives provided practical wisdom for navigating life's challenges while remaining rooted in non-dual awareness. The *Yoga Vasishtha* taught that by understanding the nature of reality, cultivating mindfulness, and embracing compassion, one could lead a fulfilling life. These down-to-earth insights empower individuals to navigate life's complexities with wisdom and grace, ultimately guiding them toward greater peace and self-realisation.

MORAL AND ETHICAL LEARNING (The Path to Higher Human Qualities)

Moral and ethical learning is fundamentally the cultivation of values that enable individuals to develop higher human qualities, such as honesty, justice, brotherhood, love, compassion, loyalty, and friendliness. It plays a crucial role in shaping a cohesive and ethical society. *Yoga Vasishtha* provides a framework for moral learning that encourages individuals to cultivate ethical values, fostering personal growth and contributing to a more harmonious society.

THE JOURNEY TO ONENESS (Rama's Awakening Through the Wisdom of Sage Vasishtha)

Sage *Vasishtha* taught *Sri Rama* the principles of yoga, imparting wisdom on various forms of meditation, self-inquiry, and non-attachment. Through diligent practice, *Sri Rama* gained enlightenment and attained a state of oneness with the supreme consciousness. From these teachings, he learnt profound truths about the secret and purpose of life, the duties associated with different roles, and the dynamics of reward and punishment within worldly existence. He understood the connections between past, present, and future lives and how one's actions—*Karma*—affected both the individual and the broader cosmic cycle.

Conclusion

The *Yoga Vasishtha* serves as a profound resource for those seeking to understand the

nature of existence and the path to liberation. This ancient text contains epic narratives akin to the *Puranas* and chronologically precedes the *Ramayana*. It addresses the myriad questions that arise in the human mind and guides individuals toward attaining *Moksha*. Sage *Vasishtha* primarily focuses on helping individuals discern the difference between reality and *Maya* (illusion). He provides not only philosophical insights but also encourages practitioners to explore their true nature through meditation and self-inquiry. By reading this text with dedication and applying its teachings, one can gain a deeper understanding of their true self, leading to lasting peace and authentic happiness.

The *Guru-Shishya parampara* is an ancient tradition where a *guru* not only imparts knowledge but also instills values and ethics, helping disciples develop a strong moral compass essential for navigating life's complexities. Achieving higher stages of advancement on the spiritual path requires total obedience to the *guru*. In contrast, the modern education system, while emphasising experiential learning and one-on-one mentorship, often prioritises institutional settings, formal education, standardised curricula, and assessments involving larger groups of students. The traditional Guru-Shishya Parampara may have diminished in contemporary society, but its values can still be integrated into modern contexts. By actively seeking to revive mentorship and emphasise ethical frameworks, we can address the moral challenges faced today and cultivate a more compassionate, responsible society. The modern educational system is focused on academic achievement, primarily career-oriented, heavily dependent on technology, digital tools and structured assessment. However, blending these systems with traditional values can foster holistic development. ❑

References

1. Gita Press. (1937). *Yoga Vasishtha*. Gita Press
2. Behl, M., and C. Pattiaratchi. 2023. Relevance of the *guru-shishya parampara* to modern-day mentorship. *Oceanography* 36(1):74–75,
3. Dasgupta, S. (1965). *A history of Indian philosophy* (Vol. 2). Cambridge University Press.
4. Goldman, R. P. (1984). *The Ramayana of Valmiki: Volume 1*. Princeton University Press.
5. Hanneder, J. (2005). Introduction. In The *Moksopaya, Yogavasistha* and related texts (pp. 15-16). Shaker Verlag.
6. Venkatesananda, S. (2010). *The Supreme Yoga: Yoga Vasishtha*. Motilal Banarsidass Publishers.

(Views are Personal)

(The co-author, Barnali Deka, is associated with Department of Yogic Science and Naturopathy, Mahapurusha Srimanta Sankardeva Viswavidyalaya, Guwahati, Assam)

Sanskrit (Saṃskṛata) Bhāṣā as a Knowledge System

DR DIPESH VINOD KATIRA | The author is an Assistant Professor at the Centre of Excellence for Indian Knowledge Systems (CoE-IKS), IIT Kharagpur, West Bengal. Email: dipesh@iks.iitkgp.ac.in

A significant portion of Indian knowledge is encoded in 'Sanskrit'. Language, or *Bhāṣā*, is vital as a carrier of knowledge. *Bhāṣā* excels when compared to other possible candidates that can act as carriers of knowledge as it abounds in words that can denote things, beings, emotions, as well as complex concepts. To overcome these limitations of *Bhāṣā*, our Vedic ancestors undertook a massive task of describing *Bhāṣā*. Since the *lakṣaṇa* created by the *Vaiyākaraṇas* is so detailed, it could now almost exhaustively recreate that one *lakṣya* at any point in space and time. This system of *Bhāṣā* and the continuum of commentaries have been successful in availing the Vedic knowledge to us to date.

A major portion of Indian Knowledge is coded in what we call 'Sanskrit'. The *Vedas* are at the core of this knowledge. All the other knowledge systems that our *Vedic* ancestors developed were a part of their attempts to protect the *Vedas*. The objective was to ensure that the message of the *Vedas* reaches all the human beings, even those who come on the earth thousands of years later. They, therefore, developed intricate mnemonic techniques to ensure that not a single word of this massive *Vedic* corpus is lost. They also envisaged dedicated disciplines to - (1) retain the exact pronunciations of each word and (2) maintain the interpretability of each word, as the *Vedas* were being passed on from generation to generation to reach us and to numerous generations yet to come. This article discusses how 'Sanskrit (the described variant of *Bhāṣā*)' developed as a part of this very effort.

Knowledge and Language

The word '*Veda*' is derived from the root '*vid*—to know'. *Veda* is therefore 'knowledge'. It is because of this reason that, apart from denoting

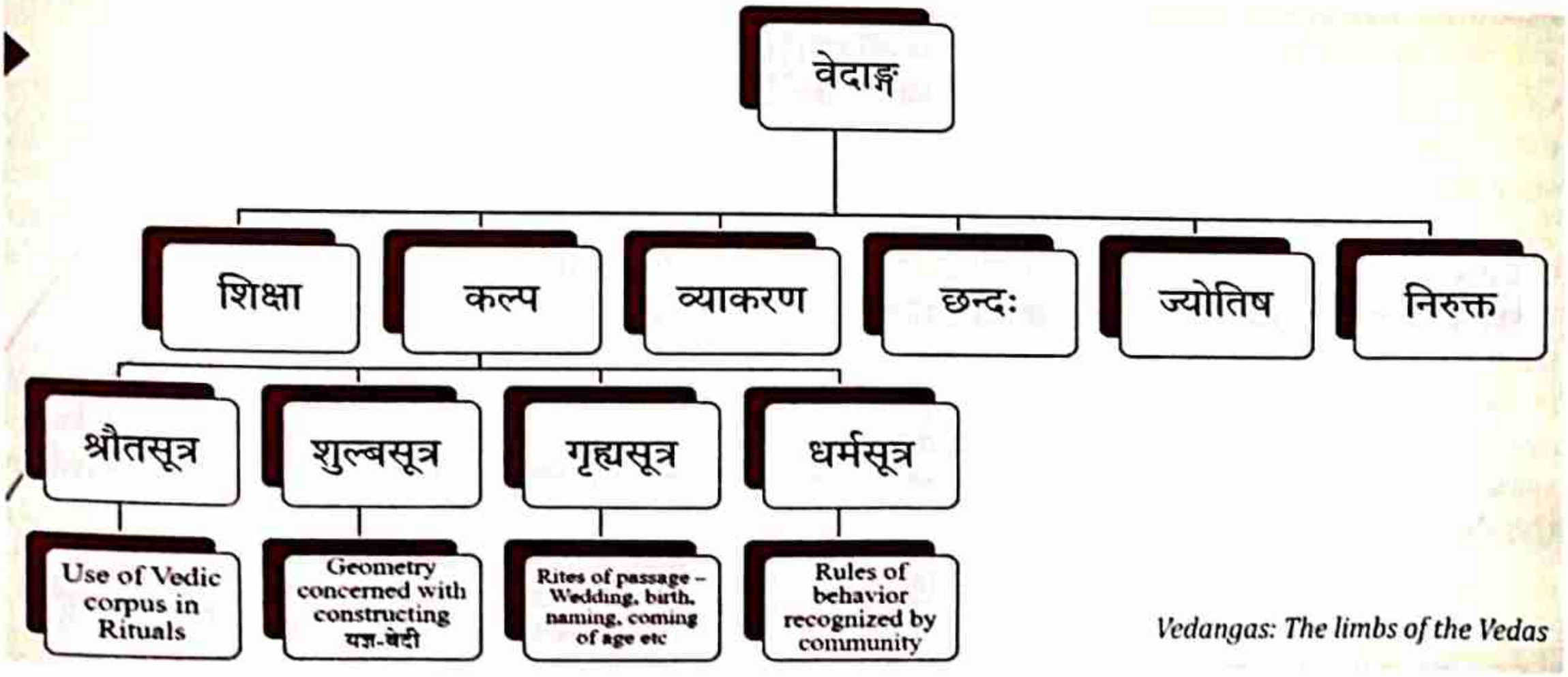
the 4 principal *Vedas*, the word *Veda* is found affixed in words also, like *Āyurveda* and *Dhanurveda*. Knowledge is abstract. It is coded in a language as soon as it is conceived in order to record, retain and transmit it. Language, or *Bhāṣā*, is therefore very important as a carrier of knowledge. A detailed understanding and analysis of the nature of *Bhāṣā*, thus become very important if the knowledge is to be retained. We see that *Bhāṣā* (as a concept and not 'A Specific Language' like English or German or Hindi) has been glorified and venerated in the *Veda* as a *Devatā*. A lot has also been discussed about the nature of *Bhāṣā* at different places in the *Vedas* as well as in the later *Vedic* literature.

Indian Outlook towards language

The Oxford dictionary lists four meanings of the word 'language', two of which, relevant to the present discussion, are (1) the means of human communication, consisting of the use of spoken or written words in a structured way, and (2) the system of communication used by a particular community or country. The word '*Bhāṣā*' discussed above and venerated in the *Vedas* is equivalent to the word 'language' only in the first sense. The word 'language' is seen accompanied with some adjective like 'English' or 'Hindi' whenever it occurs in its 2nd meaning mentioned above. 'English', 'Hindi' etc. are all proper nouns denoting a language spoken in a particular region when they occur alone as in the sentence - 'He spoke to me in English'. They become adjectives in sentences like 'The English language is very sweet' or 'I like English breakfast'. In the Indian perspective, though names of specific languages may be used for practical purposes, in principle it seems to look at '*Bhāṣā*' as one single entity that (1) is a means of communication comprising words, (2) has innumerable spatial and temporal variants, and (3) is dynamic and ever-changing. All the specific names of languages are accommodated as variants of this one single '*Bhāṣā*' in this view. This view relieves us from the task of pinpointing the exact tongue to be given a certain name as distinct from all its dialects and other similar tongues. The tradition therefore seems to desist from assigning specific names to different languages and engage in glorifying '*Bhāṣā*' alone as - *brāhmī tu bhāratī bhāṣā gīr vāg vāṇī sarasvatī* (1.6.1) up to as late as 6th CE when Amarakośa, one of the most authentic thesaurus in Sanskrit, was composed. Though this thesaurus was written in Sanskrit, no entry of the word '*Saṃskṛata*' as a proper noun indicative of a particular language can be found in it. There are also no similar entries of the words like *Pālī* or *Prākṛta* in the Amarakosa. The Amarakośa gives the following two meanings of the word '*saṃskṛta*' (as an adjective): 1. *kṛtrima* (kriyayā niṣpannamātra)—something that has emerged out of deliberate action (as opposed to something that is naturally there) and 2. *lakṣaṇopeta*—the one that has *lakṣaṇas* [those (rules/definitions/qualities) that can point out/describe].

Bhāṣā as a carrier of knowledge

Bhāṣā excels when compared to other possible candidates that can act as carriers of knowledge because it abounds in words that can denote things, beings, emotions, as well as complex concepts. It is possible to frame sentences of different lengths



Vedangas: The limbs of the Vedas

using innumerable combinations of mutually related words. It can thus express highly complex ideas too. There is an innate ability among human beings to acquire *Bhāṣā* and put it to use. *Bhāṣā* itself is a universal system of cognition and a massive shaping construct as per philosophers such as Bhartṛhari (see Kapoor, 2020, p. 12). However, there are the following shortcomings of *Bhāṣā* as a carrier of knowledge -

a. It is inherently ambiguous—There are innumerable ambiguities in *Bhāṣā*. There are synonyms, through which the same meaning is conveyed by several different words. There are homonyms, through which a single word can convey different meanings. The same sentence spoken in different situations can convey different meanings.

b. It constantly changes with space and time—*Bhāṣā* is spoken/written differently in different places. Also, the meanings and/or pronunciations of the words change with the passage of time. There is a continuous give and take between different variants of *Bhāṣā*.

In such a scenario, knowledge coded in *Bhāṣā* at a certain point in space and time is bound, either to be misinterpreted or to seem altogether unintelligible at another point in space and time.

Description as a Solution

In order to overcome the above shortcomings of *Bhāṣā*, our *Vedic* ancestors undertook a massive task of describing *Bhāṣā*. They were aware that describing the entire *Bhāṣā* was impossible. They, therefore, selected the variant of *Bhāṣā* that they themselves spoke at the point in space and time where they existed. Traces of this effort can be found in the *Vedas* themselves. Later, it developed into a full-fledged *Vedāṅga* (a discipline supplementary to the study of *Vedas*) named as 'Śabda-śāstra' or 'Vyākaraṇa'. As is evident from the above discussion, the motivation behind the development of *Vyākaraṇa* was much different from that behind the development of rigid and prescriptive 'grammar' in Greek tradition that merely aimed to promote proper writing and speaking in a language. A few of the features of this description are:

a. It describes the target variant (spoken by those who described it) in almost all its details.

b. A description so exhaustive is perhaps not available for any other language to date.

c. This target variant was not entirely different from (rather, very close to) the variant of *Bhāṣā* in which the *Vedas* are composed. After describing the target variant, this *Vyākaraṇa* also enlists slight deviations found in the variant of the *Vedas*.

d. Though the description is exhaustive, it is so concise that it may not exceed 50 printed pages of a normal-sized book so that the entire description can be easily committed to memory.

Method of Description

The composers of *Vyākaraṇa* adopted the following methods to ensure that the Vyākaraṇa is detailed yet concise:

a. The word *Vyākaraṇa* literally means 'to dissect'. *Vaiyākaraṇas** conceived two imaginary meaningful components of a word, namely, (1) a root and (2) a suffix.

b. They composed *Vyākaraṇa* in 3 components: (1) a database of roots, (2) a database of suffixes, and (3) rules for the combination of roots and suffixes for deriving correct words.

c. They wrote the *Vyākaraṇa* in *Sūtra* style—*Sūtras* are short lines like algebraic formulae. They are written in words as few as possible without compromising on the clarity of meaning. The entire *Vyākaraṇa* is written in merely 4000 *sūtras*.

d. Due to its *sūtra* style, though *Vyākaraṇa* is a description, it seems to be like rules for the generation of correct words. These rules have been arranged in default-exception format. These *sūtras* are also called as *'lakṣaṇa'*, and the variant that they describe is called *'lakṣya'* (the target variant).

How does this help?

We have seen how language tends to change constantly over space and time. Since the *lakṣaṇa* created by the *Vaiyākaraṇas* is so detailed, it could now almost exhaustively recreate that one *lakṣya* at any point in space and time. All the literary material composed in that *lakṣya* variant of the *Bhāṣā* can thus be interpreted

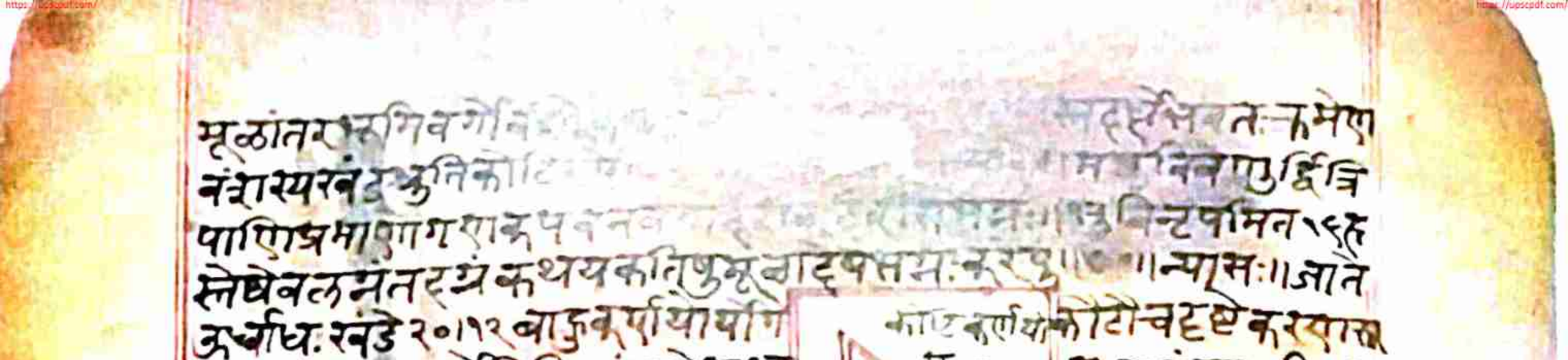
at any time with the help of the *lakṣaṇa,* i.e., the rules of *Vyākaraṇa*. It is by virtue of this exercise that the container, i.e., the *lakṣya bhāṣā* of the Knowledge, i.e., the Vedic literature (with additional description of slight deviations found in the variant in which the *Vedas* are composed), has been attempted to be perfected to facilitate the seamless transfer of knowledge contained in it. Here we see that the natural flow of *Bhāṣā* has not been hampered. Only an attempt has been made to create a snapshot of the state of one of its variants at some point in space and time. This itself is the *saṃskāra,* or processing, due to which a particular variant is called *saṃskṛta Bhāṣā* (*saṃskṛta* is always an adjective, never a proper noun). Though the language is natural, the *lakṣaṇa* that describes it is *kṛtrima,* i.e., *kriyayā niṣpanna,* born out of deliberate action. It is through the superimposition of this quality (of being artificial) of *lakṣaṇa* on the *lakṣya* that the *lakṣya* came to be known as *saṃskṛta Bhāṣā*. This also explains why the meaning of the word '*saṃskṛta*' is given as '*lakṣaṇopeta*' in the Amarakośa. This also explains why the word 'Saṃskṛta' does not appear anywhere as a proper noun of a certain language in the Amarakośa as well as in the *Vyākaraṇa* composed by Pāṇini. *Vyākaraṇa* is not of *saṃskṛta Bhāṣā*; rather, it is the other way round. It is because of *Vyākaraṇa* or *lakṣaṇa* that the *lakṣya* came to be known as '*saṃskṛta*'. In the quest to describe a specific variant of *Bhāṣā*, a detailed yet concise description was created in the form of rules. These rules were an attempt to make this one variant of *Bhāṣā* timeless. The *Bhāṣā* spoken by the speakers of the later age obviously changes, but with training in *Vyākaraṇa,* they could master that timeless variant and could create literary marvels that do not fail to enchant the readers even today.

Borrowing insights from the knowledge system of Bhāṣā:

This system of *Bhāṣā* and the continuum of commentaries have been successful in availing the *Vedic* knowledge to us to date. Adopting this, our very own Indian perspective about *Bhāṣā* can put an end to the discussion about whether today '*Saṃskṛta*' is dead or alive. This view accepts in principal, only '*Bhāṣā*' (an important yet ever-changing system of human communication consisting of words, which has continued to exist ever since), while *saṃskṛta* is just an adjective denoting one of its versions that has been described in detail. *Saṃskṛta* [even as per meaning (2) of language mentioned in 2] evolved across centuries and continues to survive in numerous Indo-European languages. Just like the tributaries and distributaries of the River Ganga are given different names while still being revered as 'Ganga' as well. With the support of its detailed description, *saṃskṛta lakṣya* (a thoroughly described variant) continues to be recreated and used. This system of *Vyākaraṇa* influenced the works of Leonard Bloomfield (an eminent American linguist) and Ferdinand de Saussure (a Swiss linguist widely considered to be one of the founders of 20th century linguistics). Scholars like James Robert Ballantyne (a Scottish Orientalist) and Böhtlingk (a Russian German Indologist) called Pāṇini the 'Father of Linguistics'. As the variant of *Bhāṣā* described by *Vyākaraṇa* is not completely different from the modern Indian languages (also variants in Indian view), numerous components of the same *Vyākaraṇa* are adopted and adapted for describing different phenomena in modern Indian languages too. ❑

References

1) Banerji, S. C.
1996 *Historical Survey of Ancient Indian Grammars (Sanskrit, Pali and Prakrit).* Delhi: Sharada Publishing House.
2) Bhate, Saroja.
2002 *Pāṇini.* New Delhi: Sahitya Akademi.
3) Bhatt, V. M.
2002 *Bhāṣāvijñānani Dṛṣṭie Pāṇinīya Vyākaraṇanuṃ Pariśīlana Tathā Aṣṭādhyāyī-sūtrapāṭha.* Ahmedabad: Saraswati Pustak Bhandar.
4) Bloomfield, Leonard.
1933 *Language.* New York: Henry Holt and Co.
5) Gurjar, J. M.
2003 *Śrī Amarasiṃhapraṇītaḥ Amarakoṣaḥ.* Bombay: Bharatiya Vidya Bhavan.
6) Joshi, S. D. and Roodbergen, J.A. F.
1986 *PATAÑJALI'S Vyākaraṇa- Mahābhāṣya PASPAŚĀHNIKA Introduction, Text, Translation and Notes.* Pune: University of Poona.
7) Kapoor, Kapil.
2020 *Dimensions of Pāṇini Grammar The Indian Grammatical System.* New Delhi: D K Printworld.



Vedic Mathematics and Methods of Multiplication in Gaṇitasārasaṅgraha

TANIMA CHATTERJEE | The author holds a Master of Philosophy and a Master of Arts in Sanskrit from Savitribai Phule Pune University, Pune, and is presently associated with IIT Kanpur. Email: tanimachattopadhyay39@gmail.com

Towards the end of the Vedic period there is a distinct type of literature that is known as *sūtra* which came to the picture, and it is well connected with the *Vedas* specifically with *Vedāṇgas*. There are six *Vedāṇgas,* i.e., *Shiksha*, *Vyakaran*, *Chhandas*, *Nirukta*, *Kalp*, and *Jyotish*. Among them, *sūtras* are part of *Kalpa*. Mathematics was developed in this time period. In *Śulbasūtra* we get references to geometry. The *Śulbasūtras* are basically practical manuals that provide various measurements and algorithms required for the construction of the *Vedi* and altars. After the Vedic period there are some scholars like *Āryabhaṭṭa, Bhāskaracārya, Śridharachārya, Mahāvīrācārya, Śaṇkaravarman,* etc. who contributed a lot to ancient mathematics. One of them was *Mahāvīrācārya*, who was the 9th century Jain mathematician, and he has written a book named *Gaṇitasārasaṅgraha* where he has given different concepts of mathematics, and interestingly, he has separated Astrology from Mathematics. The variety of methods was mentioned by the ancient scholars for the multiplication so that students of the different intellects can wisely choose the method of their convenience.

The Sanskrit word for scientific work is *Śāstra*. It deals with either scientific work or a theological treatise. In India there were different waves of invasions, and due to that, one can see different influences in the process or system of mathematics as well. We need to understand the importance and relevance of mathematics in different contexts. The existence of the subject is quite evident from the Vedic period, and the presence of the subject is omnipresent. Different types of sciences were mentioned in the Vedic schools. Their purposes have been mentioned in different texts like *Saṃhitās* with the *Brāhmaṇas* and *Āraṇyakas* and various *Upaniṣads* as well as *Vedāṇgas*. Towards the end of the Vedic period there is a distinct type of literature that is known as *sūtra* which came to the picture, and it is well connected with the *Vedas* specifically with *Vedāṇgas*. There are six *Vedāṇgas*, i.e., *Shiksha*, *Vyakaran*, *Chhandas*, *Nirukta*, *Kalp*, and *Jyotish*. Among them, *sūtras* are part of *Kalpa*.

Mathematics was developed in this time period. In *Śulbasūtra* we get references to geometry. The *Śulbasūtras* are basically practical manuals that provide various measurements and algorithms required for the construction of the *Vedi* and altars. It describes advanced knowledge of geometry, and they are known as the oldest Indian mathematical works. The *śulba* is justified by its name. *śulba* means rope or cord. In ancient times, people used to measure the shape of the altar with the help of rope. So we can say that all these things were studied in detail in ancient India in the Vedic period as the study of sacrifices (*yajñya*) originated from India and various necessary items were explained. In the *śulbasūtras*, construction of the sacrificial altars is mentioned precisely. The *śulbasūtras* are broadly divided into 6 *patalas* which are also known as sections. The first section of the manual has given some important geometry-related propositions which are required for altars. There are only four śulbasūtra available now; they are *Baudhāyana*, *Āpastamba*, *Kātyāyana* and *Mānava*. Among all the *Śulbasūtras*, *Baudhāyana* is the biggest one and it is considered as the oldest one as well.

After the Vedic period there are some scholars like *Āryabhaṭṭa*, *Bhāskaracārya*, *Śridharachārya*, *Mahāvīrācārya*, *Śaṇkaravarman*, etc. who had contributed greatly to ancient mathematics. One of them was *Mahāvīrācārya*, who was the 9th century Jain mathematician, and he has written a book named *Gaṇitasārasaṅgraha* where he has given different concepts of mathematics, and interestingly, he has separated Astrology from Mathematics. He has mentioned that

Ministry of Education
Government of India

National Education Policy 2020

KNOWLEDGE OF INDIA

Indian Knowledge Systems, including tribal knowledge and indigenous and traditional ways of learning, will be covered in school's curriculum

the fundamental concepts of astrology and mathematics are different, and due to that, they cannot be treated in the same way. It is one of the earliest Indian texts that discussed various concepts of mathematics very clearly. It helps researchers a lot. He is the first person to assert that the square root of a negative number does not exist in mathematics.

Gaṇitasārasaṅgraha has accumulated different types of problems. Many problems are characterised by mathematical explanations, poetic beauty, and a proper hint of humorous content, which are extremely rare in any mathematical text book. Now we can proceed further with the fundamental content of the book. There are a total of 9 chapters in the book, and broadly, these chapters are focusing on the salutation to Lord *Mahāvīra*, definitions of technical terms, eight logistics, determination and many other things related to arithmetic and geometry. Arithmetic is part of our day-to-day lives, especially the basic mathematics, i.e. addition, subtraction, multiplication and division. Interestingly, our ancient scholars had given many methods for multiplication. Some methods are easy, and some are a little hard.

In this brief note, we briefly discuss the verses given by *Mahāvīrācārya* in *Gaṇitasārasaṁgraha* for multiplication. There are three methods of multiplication given by him. The example verses are quite elegant and thoughtful. We will discuss all the processes and examples in detail.

महावीराचार्य गुणनम् पद्धति

गुणयेद्गुणेन गुण्यं कवाटसिन्धक्रमेणसंस्थाप्य।

राश्यर्धखण्डतत्स्थैरनुलोमविलोममार्गाभ्याम्॥

6 {गणितसारसंग्रह (महावीराचार्य)}

Meaning:

Place the multiplicand and the multiplier one below the other in the manner of hinges of a door; the multiplicand should be multiplied by the multiplier in accordance with either of the two methods, namely normal or reverse. Split up the multiplicand or the multiplier into two or more parts. Then multiply the multiplier by a factor of the multiplicand, or multiply the multiplicand by a factor of the multiplier.

When the multiplier remains in the same position, then the process is known as *Tatstha*.

(1) कवाटसन्धि ***Kavātsandhi***

(2) तस्थ ***Tatstha***

(3) खण्ड ***Khaṇḍa***

Now let us see all the methods with examples.

1. कवाटसन्धि *Kavâtasandhi*

The first process is *kavātsandhi*. This process is called door injunction. It can be done in two ways, i.e., inverse or direct. The first digit of the multiplicand should be placed just under the last digit of the multiplier. The first digit of the multiplicand will be multiplied by the multiplier first, then the rest of the process will be continued in the same way.

Let us start with the direct process.

- We will take two numbers, multiplicand and multiplier - 123x21
- In this process, multiplier would be placed up and multiplicand in the below.

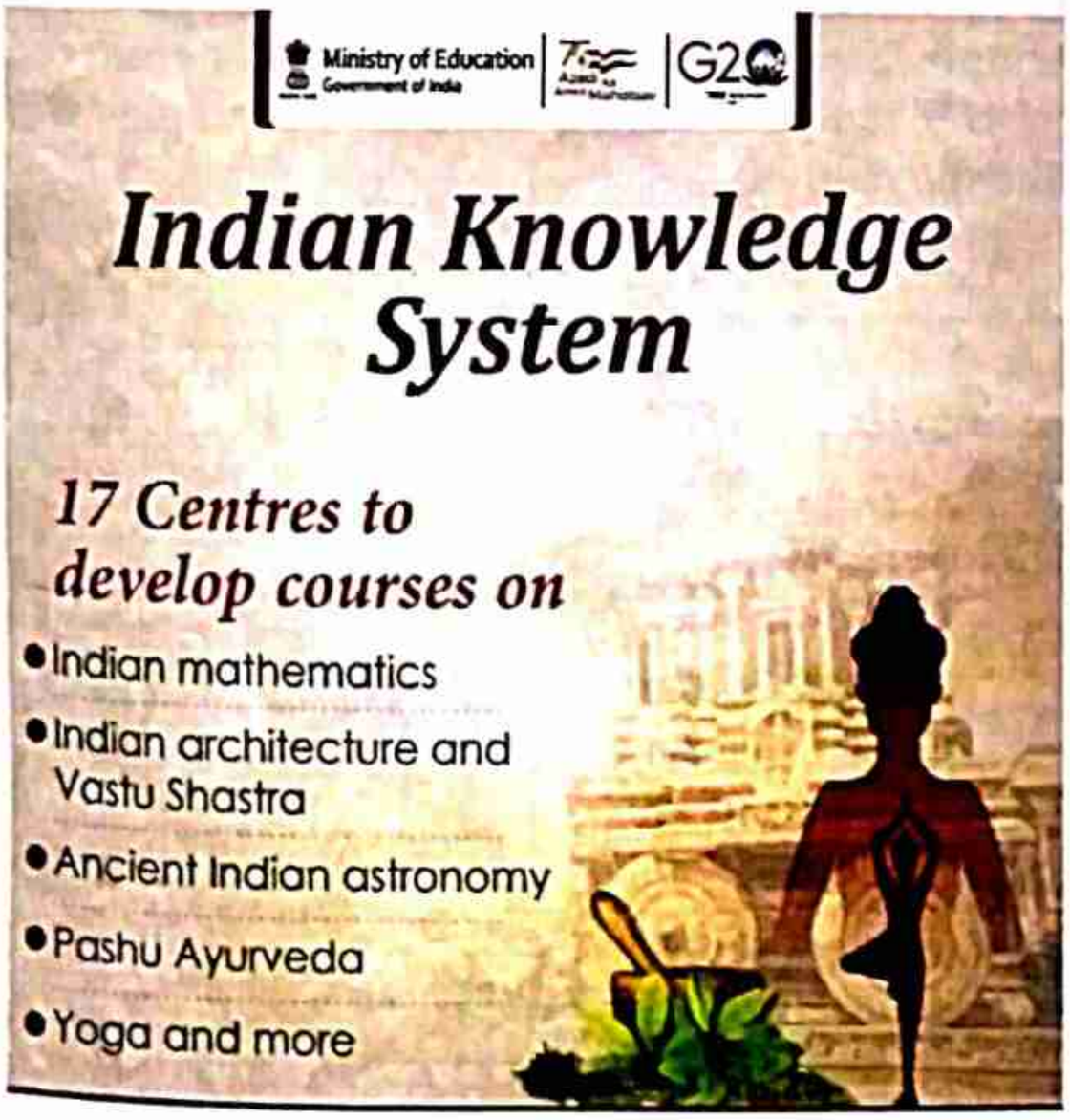
X	1	2	2 3	1
	1	2	6	3

In the first step, we will multiply 21 with 3, and the remaining number (1,2) will be the same.

- Now we will shift the multiplier to the left.

X	1	2 2	1 6	3
		2x2=4	(2x1)+6=8	
	1	4	8	3

In the second step, multiply 21 with 2.



After the multiplier 21 has been moved another place towards the left now we got the figure which is like-

In the final step multiply 21 x 1.

X	2 1	1 4	8	3
		(1x1)+4=5		
=	2	5	8	3

So the final result is- 2583.

Let us see the same process in the inverse way- 123x21

X	2	1 1	2	3
=	2	1	2	3

Now let us shift the multiplier into the right.

X	2	2 1	1 2	3
		(2x2)+1		
=	2	5	2	3

After this multiplier 21 has been moved another place towards the right.

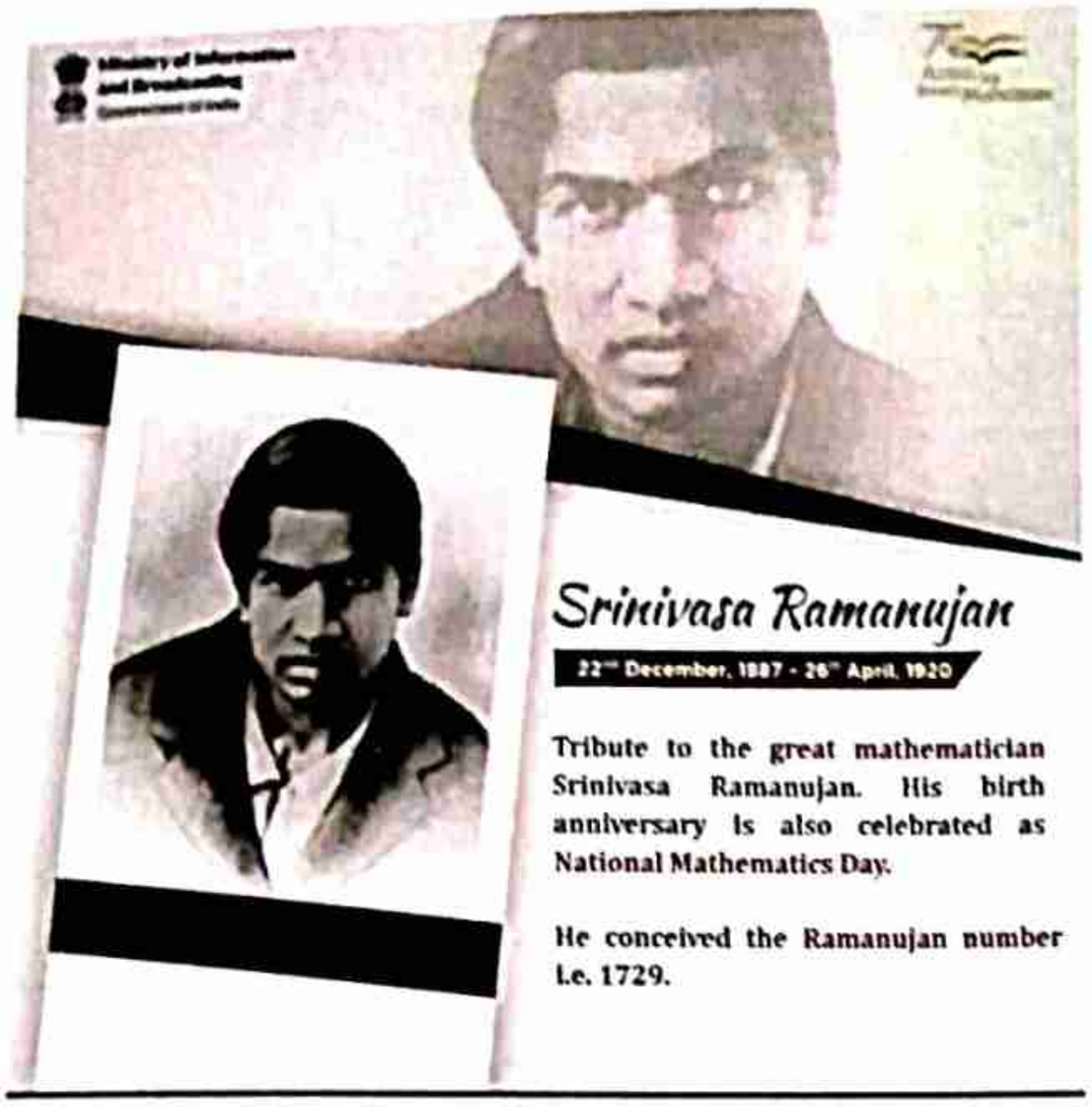
	सहस्र	शतक	दशक	एकक
X	2	5	2 2	1 3
			(3x2)+2=8	
=	2	5	8	3

So, the result is 2583.

2. तस्थ *(Tatstha)*

Now we will discuss the second process, *tatstha*. Here the multiplier and multiplicand will not move, but they will remain in the same position. So, we will do this process with the cross method. After placing the multiplier under the multiplicand, multiply unit by unit and note the result below. Then multiply unit by ten and ten by unit, add together, and set down the result in a line. Next, multiply unit by hundred, hundred by unit, and ten by ten, add together, and write the result, and so with the rest of the digits.

Now we will explain this process with an example-



814x526

814 (multiplicand)

526(multiplier)

3. ***Khaṇḍa***

In this method, the multiplier will be broken up into two or more aliquot parts. Then the multiplicand will be multiplied by one of these parts and the resulting product by the second part and so on till all the parts are exhausted. The ultimate product is the result.

	लक्षम्	अयुत	सहस्र	शतक	दशक	एकक
4x6	--	--	--	--	2	4
(6x1)+(2x4)	--	--	--	1	4	--
(6x8)+(5x4)+(1x2)	--	--	7	0	--	--
(2x8)+(5x1)	--	2	1	--	--	--
8x5	4	0	--	--	--	--
=	4	2	8	1	6	4

Let us see an example- 125x35

125 is the multiplicand and 35 is the multiplier. Broke the multiplier into two parts - 35=7x5

	सहस्र	शतक	दशक	एकक
		1	2	5
X				7
Carry over digit		1	3	
=		8	7	5

Now this new product would be multiplied by 5.

	अयुत	सहस्र	शतक	दशक	एकक
			8	7	5
X					5

Carry over digit			3	2	
=		4	3	7	5

Now we will solve some examples given by *Mahāvīrāchārya* with the help of the above mentioned methods.

दत्तान्येकैकस्मै जिनभवना याम्बुजानि तान्यष्टौ।

वसतीनां चतुरुत्तरचत्वारिंशच्छताय कति ॥ २ ॥

Eight lotuses were given in offering to each *Jina* temple. How many were given away to 144 temples?

We will solve this problem with the help of the reverse multiplication method- 144x8

	सहस्र	शतक	दशक	एकक
8x1		8		
8x4		3	2	
8x4			3	2
=	1	1	5	2

चत्वारिंशच्चैकोनशताधिकपुष्यरागमणयोऽर्च्या : ।

एकिस्मन् जिनभवने सनवशते ब्रुहि कति मणयः ॥ ४॥

One hundred and thirty-nine *puṣyarāga* gems have to be offered for worship in a single *Jina* temple. Say, how many gems have to be offered in 109 temples. Let us solve this example with *Tatstha* method.

139, 109

	अयुत	सहस्र	शतक	दशक	एकक
9x9				8	1
(3x9)+(9x0)			2	7	
3x0			0		
(1x9)+(3x0)+(9x1)		1	8		
(1x0)+(3x1)		3			
1x1	1				
Carry over digits		1	1		
=	1	5	1	5	1

हिमगुपयोधिगतिराशिवह्निव्रतानिचयमत्र संस्थाप्य।

सैकाशीत्या त्वं मे गुणयित्वाचक्ष्व तत्सङ्ख्याम् ॥८॥

In this problem, write down (the number represented by) the group (of figures) consisting of 1,4,4,1,3 and 5 (in order from the units' place upwards) , and multiply it by 81; and tell me the answer.

हिमगु is the synonym of one. पयोधि - 4, गति - 4, राशि - 1, वह्नि - 3, व्रतानि- 5. These are the

synonyms of the numbers given by *Mahāvīrācārya* in the first chapter of *Gaṇitasārasaṅgraha* called संख्यासंज्ञा.

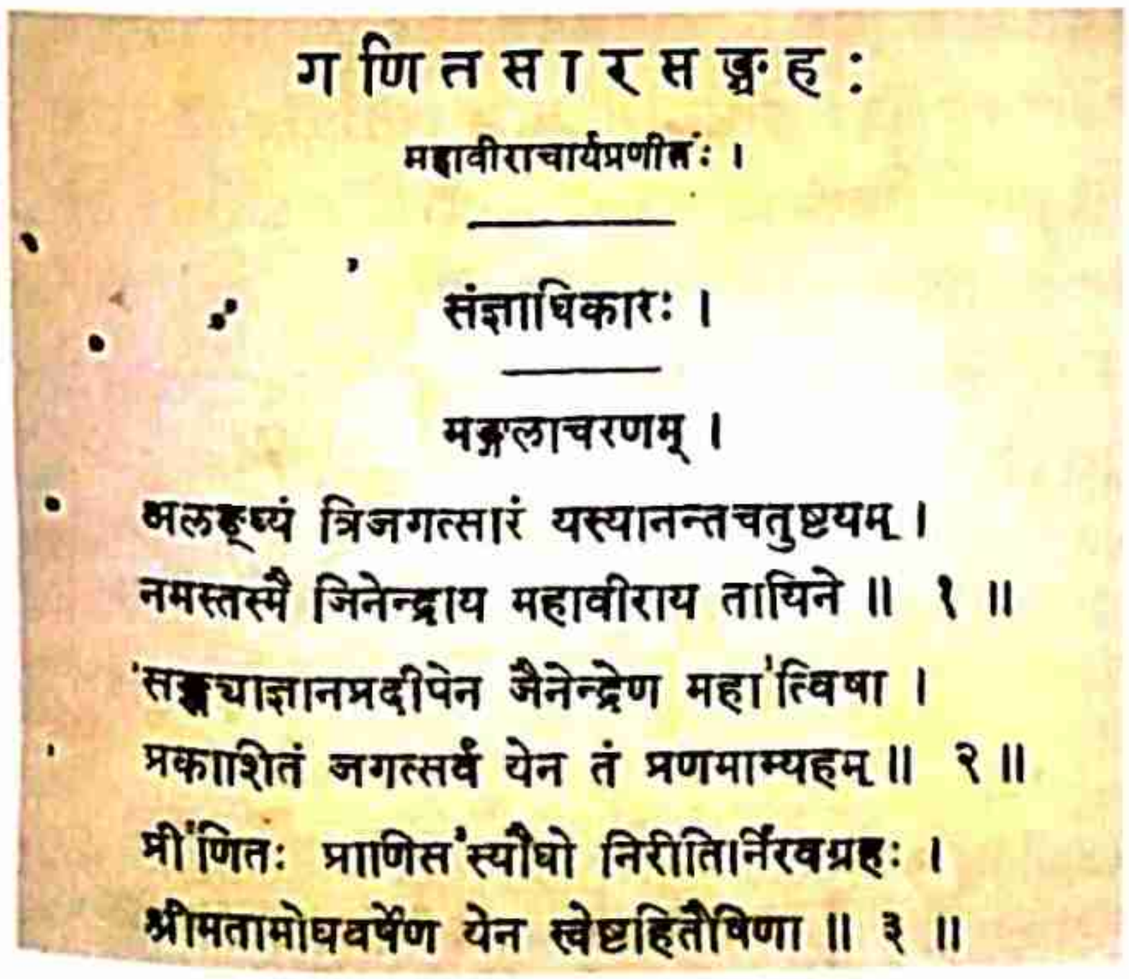
We will solve this problem with the help of *Khaṇḍa* method. 144135 x 81

Split up 81 into two parts 9 and 9.

		अयुत	सहस्र	शतक	दशक	एकक
	1	4	4	1	3	5
X						9
Carry over	3	3	1	3	4	
	2	9	7	2	1	5

			अयुत	सहस्र	शतक	दशक	एकक
	1	2	9	7	2	1	5
X							9

Carry over		2	8	6	1	1	4	
	1	1	6	7	4	9	3	5



गणितसारसङ्ग्रहः

महावीराचार्यप्रणीतः।

संज्ञाधिकारः।

मङ्गलाचरणम्।

अलङ्घ्यं त्रिजगत्सारं यस्यानन्तचतुष्टयम्।
नमस्तस्मै जिनेन्द्राय महावीराय तायिने ॥ १ ॥
सङ्ख्याज्ञानप्रदीपेन जैनेन्द्रेण महात्विषा।
प्रकाशितं जगत्सर्वं येन तं प्रणमाम्यहम् ॥ २ ॥
प्रीणितः प्राणिसस्यौघो निरीतिर्निरवग्रहः।
श्रीमतामोघवर्षेण येन स्वेष्टहितैषिणा ॥ ३ ॥

Conclusion

- The method of multiplication that we use today can thus be traced back to the ancient time period. It is evident from the previously mentioned verses that this method was commonly used by the ancient Indian mathematicians and the students of mathematics.
- The variety of methods was mentioned by the ancient scholars for the multiplication so that students of the different intellects can wisely choose the method of their convenience. In this way, mathematics will no longer be the hard subject but the subject that matches their wavelength and helps them to reach the correct answer.
- We have discussed three methods; among them, *Kavātsandhi* is a little bit difficult for school children and it is very tricky to solve the problem with this method. Another two processes are very easy and interesting as well.
- The examples given by *Mahaviracharya* were very thoughtful and easy to understand for school children. He uses the synonyms of the number in examples, which was an interesting factor in ancient times.

In spite of this work, many more outcomes can be achieved by studying ancient Indian mathematics. ❑

References

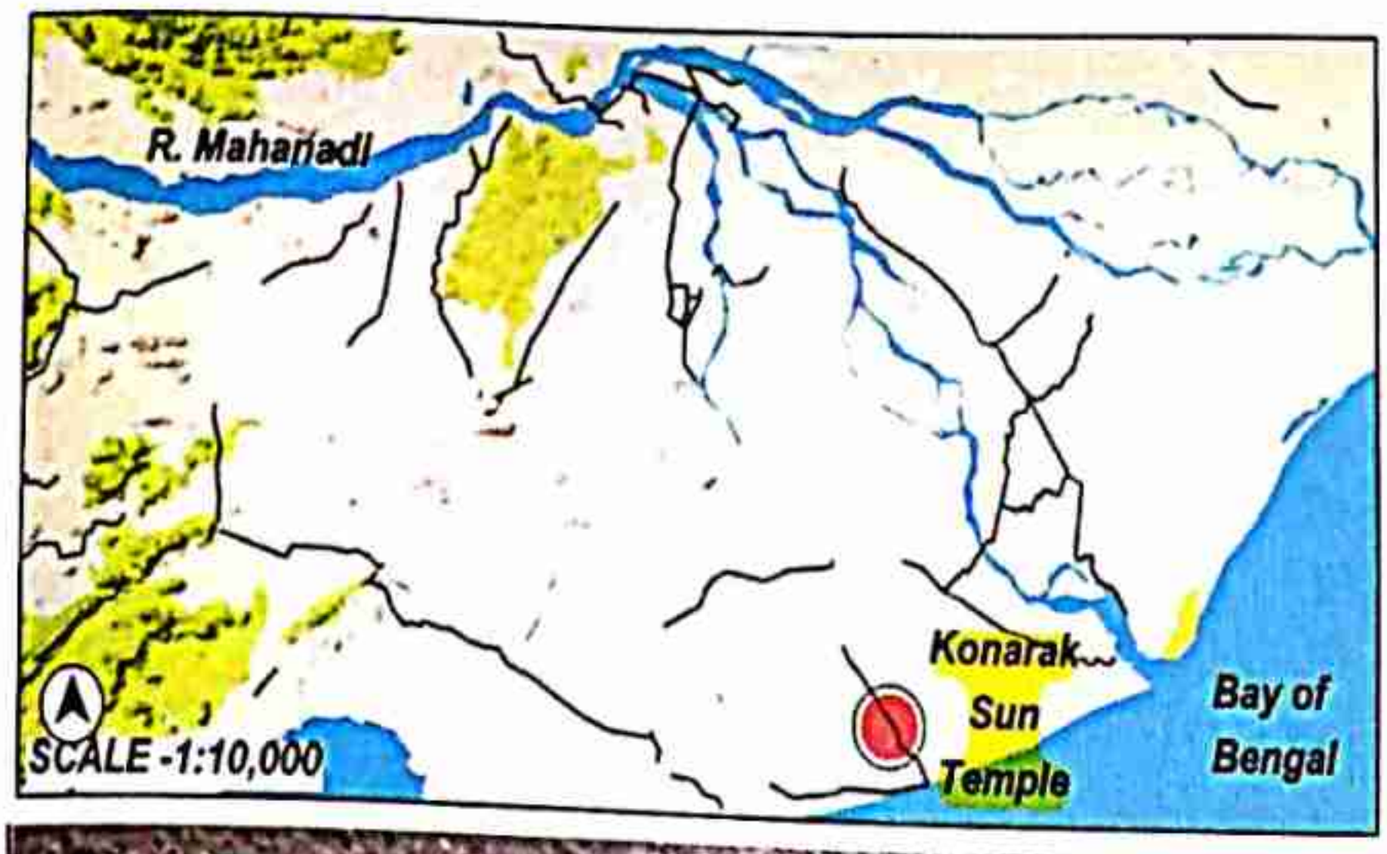
1. L.C. Jain, Mahaviracharya's Ganitasarasamgraha (An Ancient treatise on Mathematics), Jivaraja Jaina Granthamala, JABALPUR
2. M. Rangachrya, Ganitasarasamgraha, cosmos publications, New Delhi, 2011.
3. Bibhutibhusan datta and Avadhesh narayan singh, History of hindu mathematics Volume – I, Bharatiya kala prakashan, Delhi.
4. Albrecht Weber, The history of Indian literature, Trubner & Co. Ltd., London.
5. Bag A.K, Mathematics in ancient & medieval India, Chaukhambha Orientalia, New Delhi, 1979.
6. Chattopadhyaya Debiprasad, History of Science & technology in Ancient India (Part III), Firma k|m private limited, Calcutta, 1996.
7. Contribution of Ancient Indian Mathematicians (with special reference to multiplication)- M.Phil dissertation by Tanima chatterjee, Guide- **Anagha Joshi,** professor, CASS savitribai phule pune university. Special guidance by **Shashikant Katre,** professor, savitribai phule pune university.
8. IIT Kanpur IKS project - **Arnab Bhattacharya** (Guide), Professor, IIT Kanpur, arnabb@iitk.ac.in

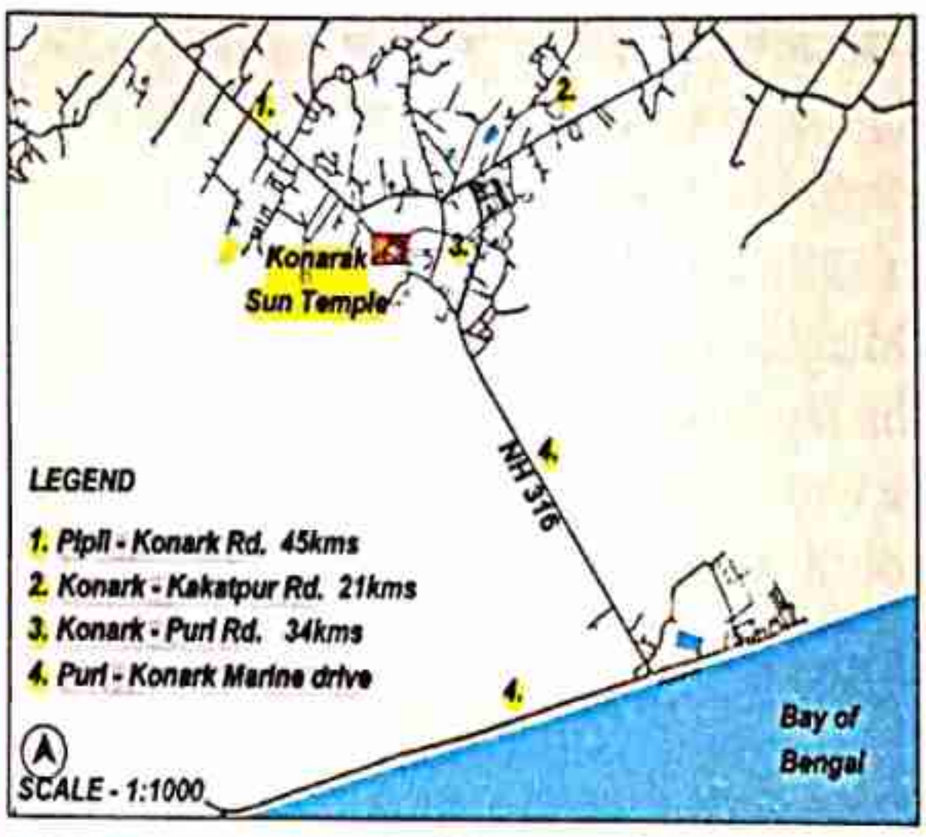
Konark's Sun Temple: A Geo-Heritage Marvel on the Mahanadi Delta

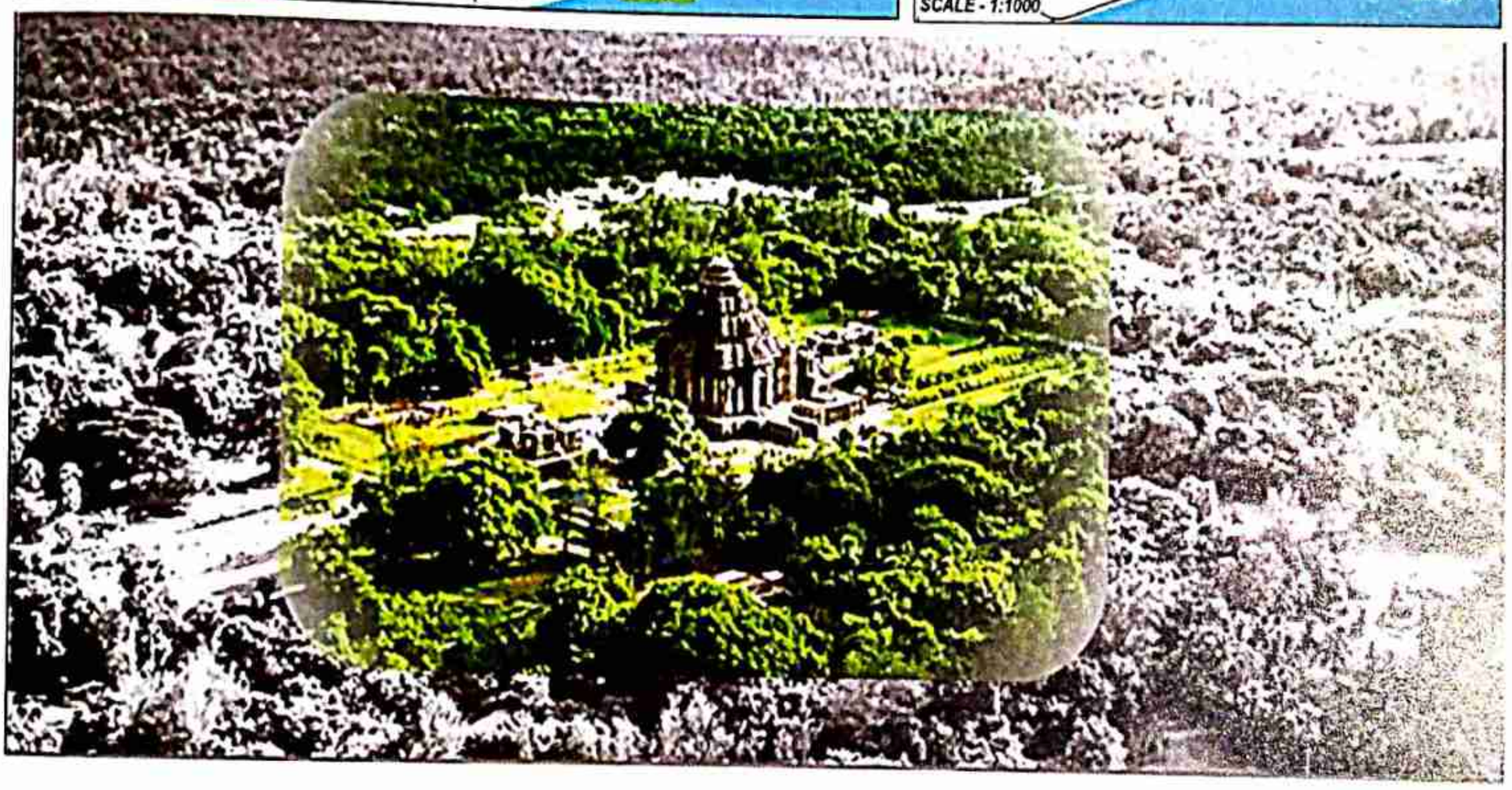
ELSA ROY | The author is currently pursuing a Master's degree in Architecture (Conservation) at the School of Planning and Architecture, Bhopal, Madhya Pradesh.
Email: uniquejennie@gmail.com

The Sun Temple at Konark, located on the eastern coast of India in Odisha, is an architectural marvel and a UNESCO World Heritage Site. Constructed in the 13th century, this temple is dedicated to Lord Surya, the sun god, and is renowned for its intricate carvings and unique design that resembles a colossal chariot. The temple not only serves as a significant religious site but also as a testament to the advanced engineering and artistic skills of ancient Indian civilisation. This article aims to delve into the historical, architectural, and geological aspects of the Sun Temple while addressing its current condition and the challenges it faces.

The article first deals with the methods used in the completion of the report and the tools and techniques used while documenting the Konark site. Then briefly, Puri district is mapped out along with site location. It covers the climate of the place; flora and fauna and their impact on the structure; geological data that traced out the important lost rivers and gave birth to sources of rock and soil that were once used as building material in structures found in the region, including the Konark temple complex.







Comparative study of the sun temples of India and the sun temples of neighbouring states of Odisha was done to get a better understanding of this magnificent temple. Understanding and mapping of the rule of the Ganga Dynasty, which led to the birth of the Konark Sun Temple, was done in three parts: the birth, rise and fall of the temple. The research was concluded with the understanding through its spatial layout circumstances that led to the construction of the temple and how the temple was constructed on the seashore. Since the Konark Sun Temple is identified as a World Heritage Site, heritage zones have been mapped as per the UNESCO and ASI guidelines, which define the protected, prohibited and regulated areas of the site. Condition assessment and mapping is done with the ruins of the temple. Issues were identified based on which proposals were made to protect the structure from further deterioration. The main focus was Jagamohan, which is the only surviving structure of the temple. The present and future measures and actions that are taken and will be taken for the protection of the Jagamohan, is elaborately covered in the article. Lastly, the intervention mapping of the temple complex was done, where proposals were given from a conservation aspect to protect the structure from further deterioration.

Puri, one of the coastal districts of Odisha, is well known for its history since the 9th century AD and was partially covered under River Mahanadi as per the evolution of the Mahanadi delta. Site location is based on mythological and religious aspects. It covers an area of 3479.00 km², including a 5 km shoreline. The city is located at 19.8134°N latitude and 85.8315°E longitude, on the coast of the Bay of Bengal.

It is a unique example of Pancharatha Dravid and Nagar style, locally known as Kalinga Style, built during (12th - 13th) century.

The name 'Konark' has been derived from the presiding deity 'Konark', which means the Sun god of the corner. In the Ganga inscriptions, the place is mentioned as Konakona, and 'Kona' is used to mean the South-East corner. The demon *Arka*

was killed by the Sun god in the *Agnikona* (southeast corner) of the earth so the place became famous as Konark. In major temples of Odisha, such as the Lingaraja and the Jagannatha temple, the Sun god is worshipped in the *Agnikona* or southeast direction.

Replica of Konark Wheels at Rashtrapati Bhavan in New Delhi

Understanding the setting of the temple in relation to its surroundings through people, place, time and technology

1906 - a large-scale plantation of the casuarina and pinang trees in the direction of the sea, to control and minimise the sand drift and the effect of the abrasive action of the salt-laden seawinds.

1984 - Balukhand Konark WLS was established (55-57 per cent of the sanctuary is in Konark area).

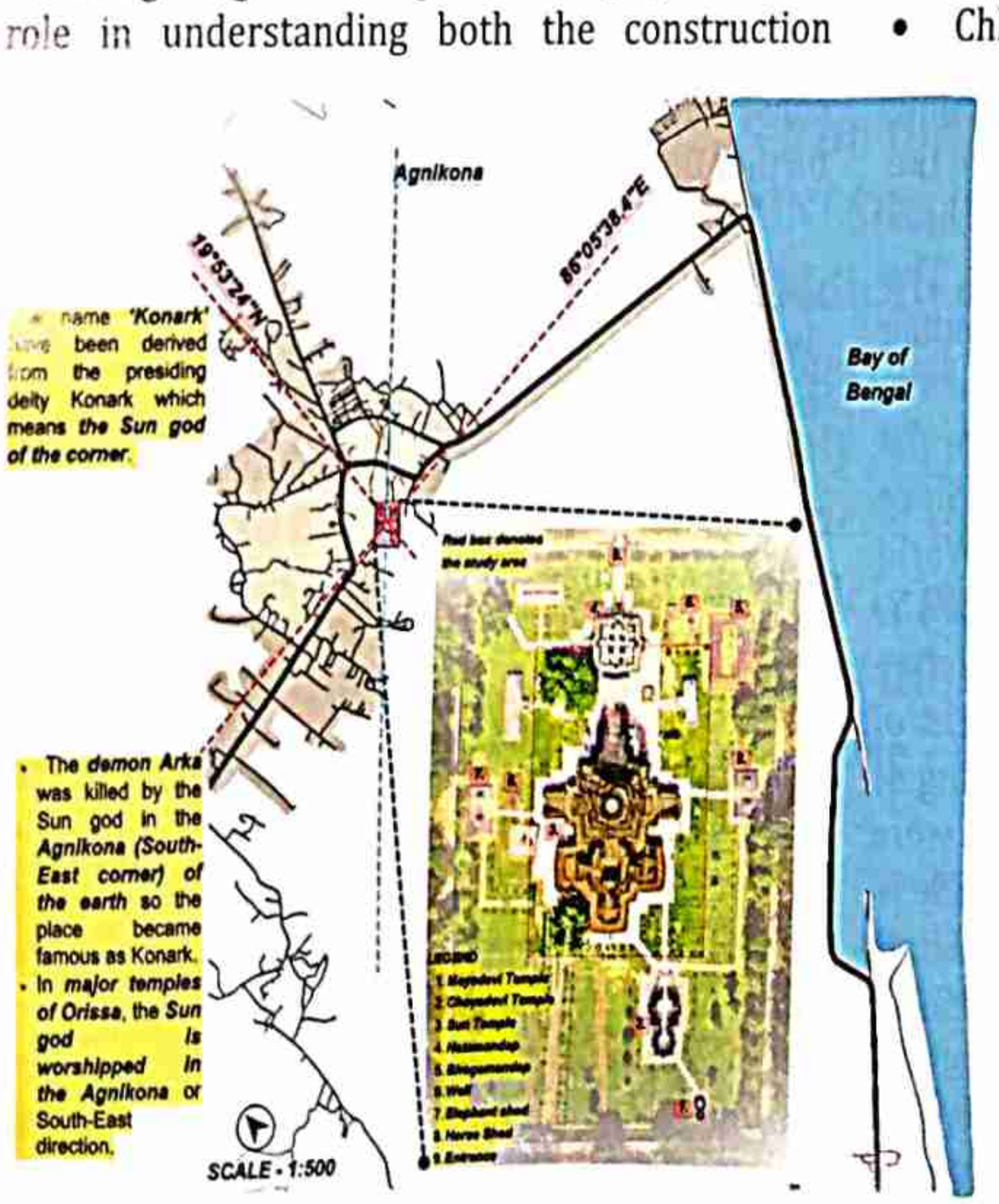
Geological Aspects

Geologically, a small part in the extreme north of the district is represented by Khondalite gneiss of Archaean age, and the remaining part is covered by a thick pile of Quaternary sediments ranging in age from Pleistocene to present day.

The geological setting of Konark plays a crucial role in understanding both the construction techniques used in building the temple and its ongoing preservation challenges. The region is characterised by alluvial deposits from the Mahanadi River delta, which have shaped the landscape over centuries. The availability of different stone types influenced construction choices; for instance:

- Khondalite: Used for structural elements due to its durability.
- Laterite: Primarily used for foundations because it is easily quarried.
- Chlorite: Selected for intricate carvings due to its workability.

Geological studies indicate that changes in river courses and sediment deposition have impacted the stability of the site over time. The temple's location near the coast makes it vulnerable to erosion caused by tidal surges and cyclonic activity.

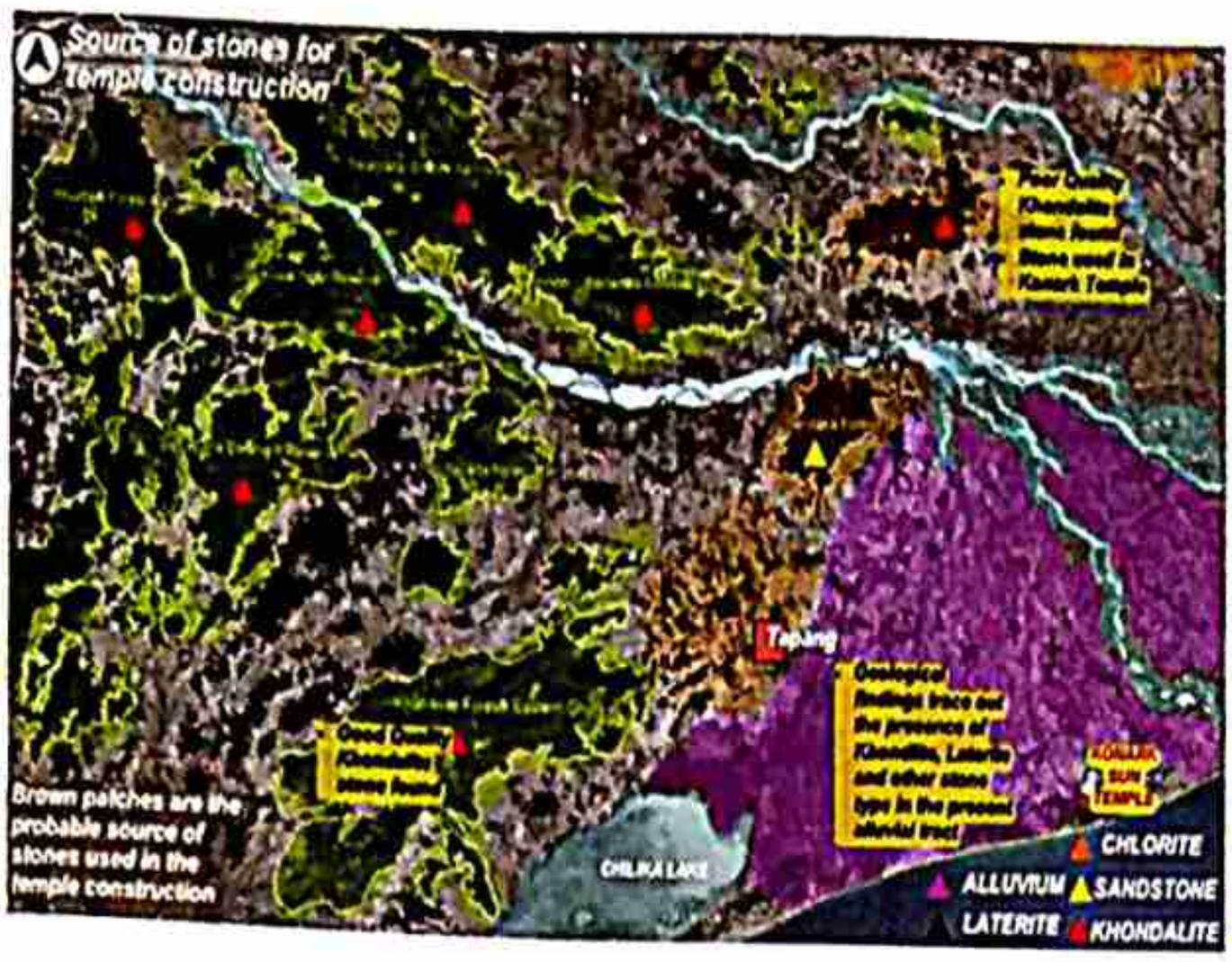


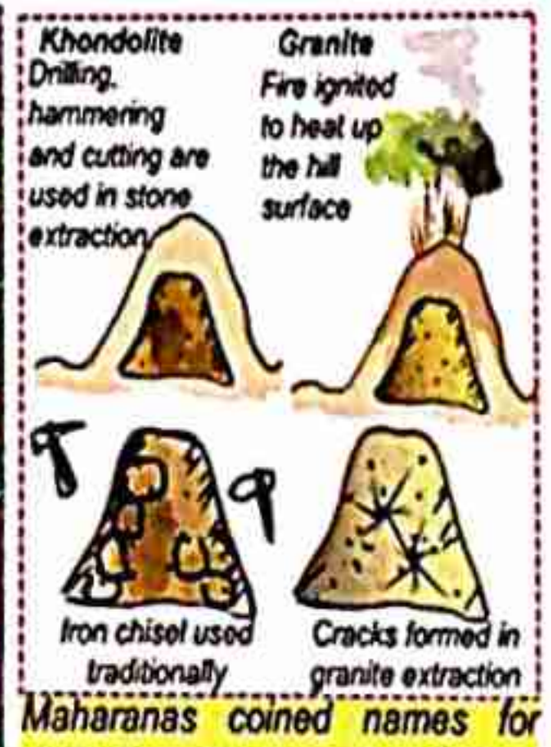
River System

The Puri region's topography is primarily undulating to plain, consisting of coastal sandy and alluvium soil. The district falls in the Mahanadi River basin, and the main drainage is formed by the rivers Daya, Devi, Kushabhadra, Bhargavi, and Prachi, which have southerly, southeasterly and southwesterly courses. The rivers have reached their old stage and are branching into a number of

Geology of the region

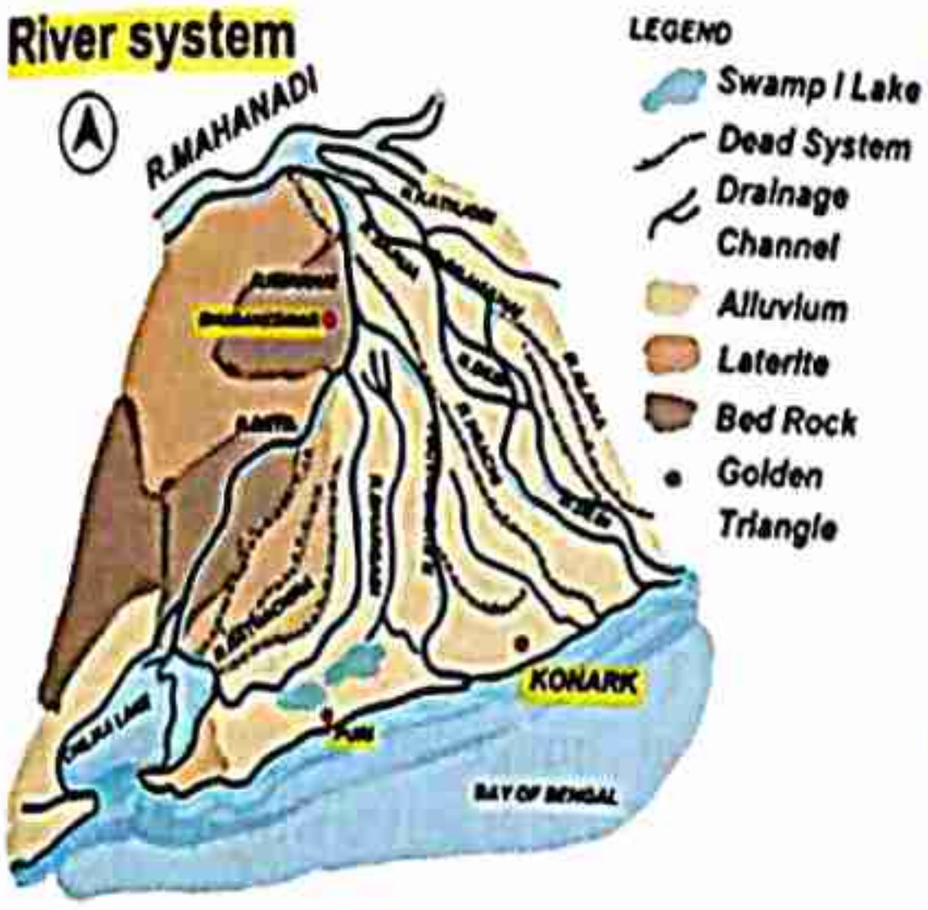
- Small part in the *extreme north of the district - Khondalite gneiss of Archaean age*
- *Remaining part* - a thick pile of *Quaternary sediments* ranging in age from *Pleistocene* to present day.

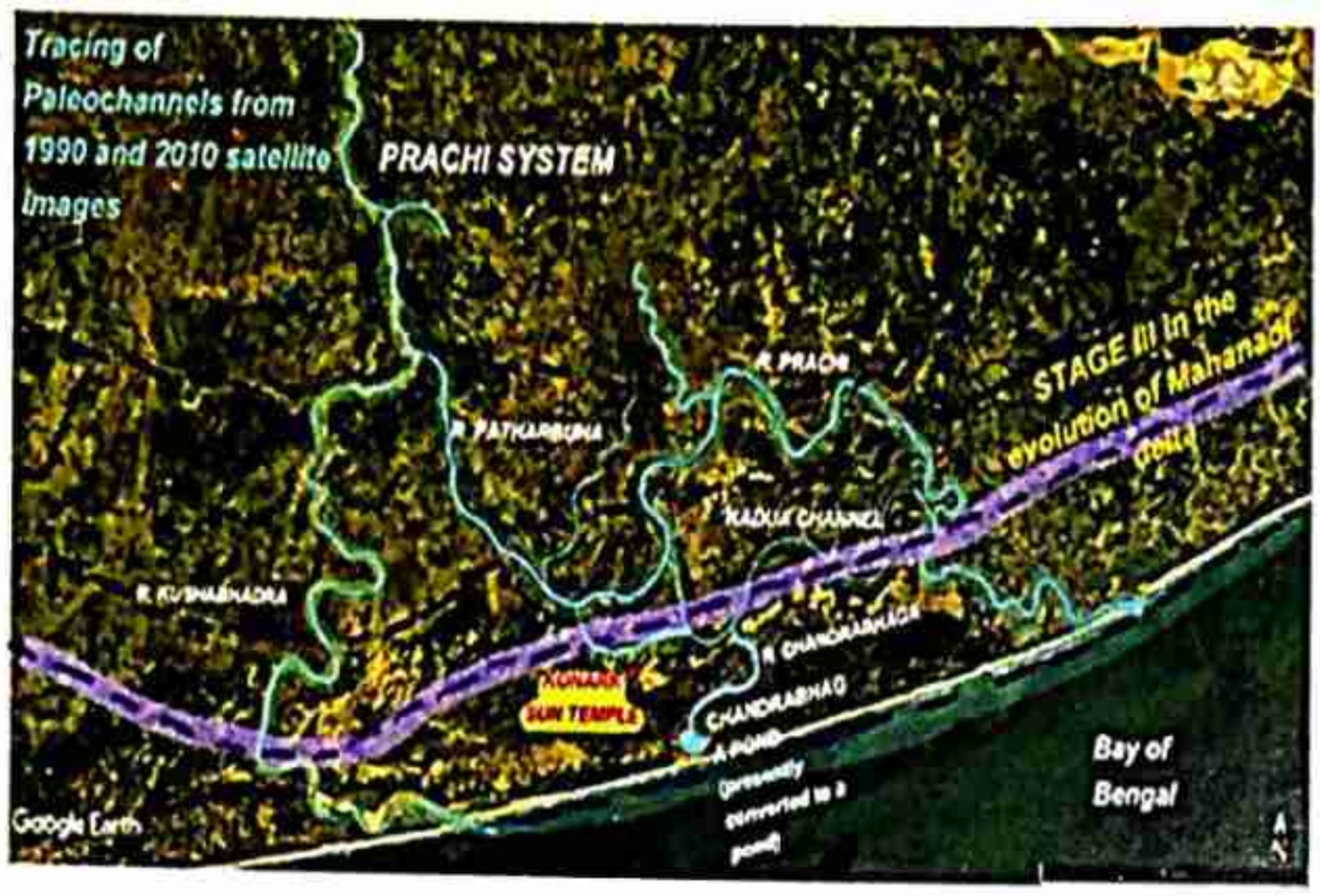




Maharanas coined names for various stones (sandstone, laterite, granite) that were used for construction like ***mankada, muguni, bagada kanda, Ranga - dalima, Baulamala, etc.***

River system





distributaries draining into the sea or the Chilika Lake, which is a lagoon separated long back from the Bay of Bengal.

Sources of Stones used in the Temple

In the early phase of temple construction stone was used to ensure the permanence of structures. The building of a temple requires the cooperation of several classes of persons like the *sthapaka* (the architect-priest), *sthapati* (the designing architect), *sutragrahin* (surveyor), *taksaka* (sculptor) and *vardhakin* (builder-plaster-painter) and involves several processes like quarrying of stones, collection of other building materials, selection of the site, laying the foundation, building it according to the plan, raising stone blocks, embellishing the exterior walls with fine carvings, etc. In the construction of temples, *Silpasastra* texts are followed. Local *Sthapatis* coined names for various stones (sandstone, laterite, granite) that were used for construction, like *mankada, muguni, bagada kanda, Ranga - dalima, Baulamala,* etc. In the Konark Sun Temple, three major stones were used: Laterite, Khondalite and Ultra-basic (Chlorite). Khondalites are the principal stones used in the temple.

Historical Context

The Sun Temple at Konark was commissioned by King Narasimhadeva I of the Eastern Ganga dynasty around 1250 CE. It was built to commemorate his victory over invaders and to honour Lord *Surya*, who was believed to grant prosperity and victory. The temple's construction involved thousands of artisans and labourers, showcasing the collaborative effort that characterised monumental architecture in ancient India. The site is steeped in mythological significance, with local legends attributing its creation to divine inspiration.

Why was this site chosen?

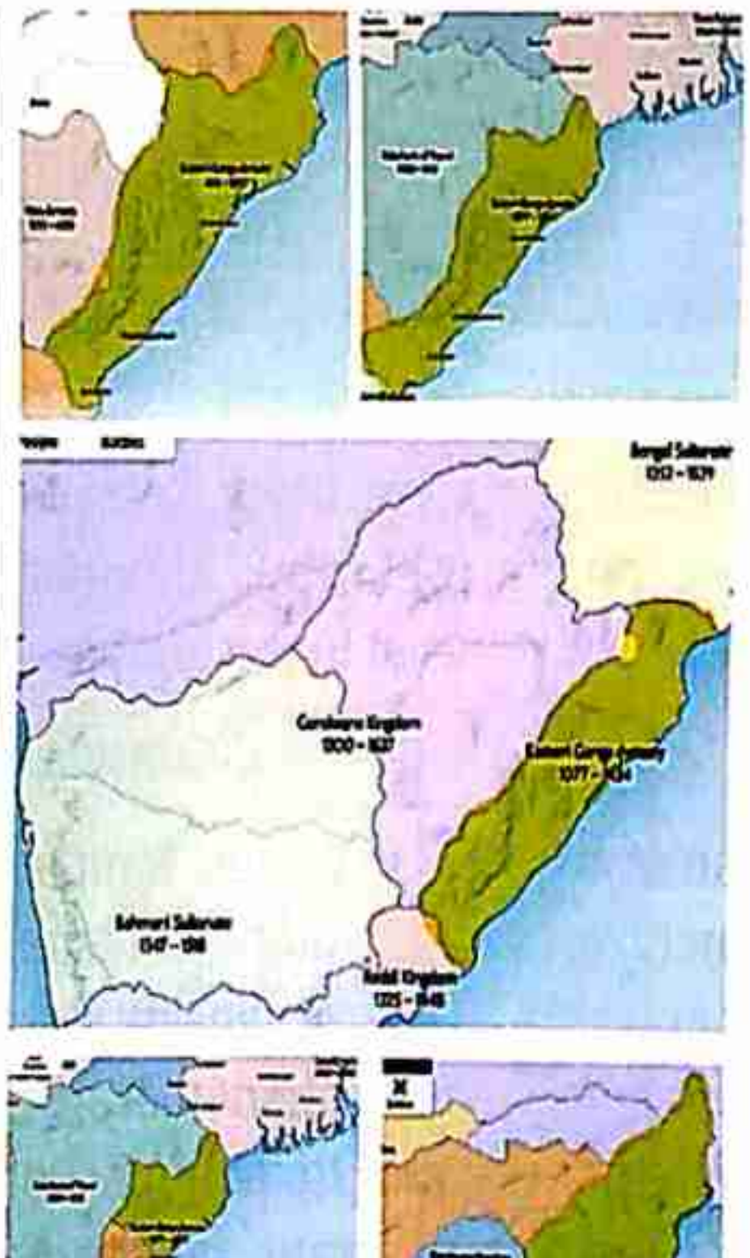
The site is as old as 2nd century AD and was partially covered under the River Mahanadi as per the evolution of Mahanadi delta. The present location of the temple is based on mythological

and religious aspects. Later in the 17th century, this temple, the Black Pagoda, became a landmark for European sailors. Narasimha I was not a great devotee of the Sun God. Therefore, the reason behind the construction of this temple has become a subject of much speculation. There are debates on this, which lead to various theories. One theory says that before the construction of the temple, there was an abnormal increase in sunspots causing skin disease, due to which sun worship became popular. The total eclipse of the sun that occurred during that time could have been a reason for its construction to express devotion to the god. Considering the special power of the Sun-god to cure all forms of illness, and especially leprosy, one view maintains that Narasimha I was afflicted with leprosy, and, when he was cured of this disease by the grace of the Sun-god, he built a temple in gratitude. Some theories say that he built the temple out of gratitude when he was blessed with a son by the boon of the Sun-god. The naming of his son as *Bhanu* seems to support this suggestion. On the basis of research, it is believed that River Mahanadi and River Prachi were very important channels during that time for the transportation of building materials as well as considered holy rivers. The Chandrabhaga River, which was considered holy during that time due to its healing property from skin diseases, and that's how the site location was decided. The site is also in close proximity to the forested hill ranges that treasure building materials extensively used in the temple complex, like Khondalite, Laterite, Chlorite, and brick.

Architectural Description

The architectural style of the Konark Sun Temple is a remarkable blend of Kalinga architecture and Dravidian influences. The temple is designed as a massive chariot with twelve pairs of wheels, symbolising the passage of time and the movement of the sun across the sky. Each wheel is adorned with intricate carvings that depict various aspects of life, mythology, and nature. The temple's sanctum houses a colossal image of *Surya*, originally made of black granite, which has since deteriorated due to environmental factors. The construction techniques employed in building the temple are noteworthy. According to historical accounts and archaeological studies, large stones were transported from nearby quarries using innovative methods involving wooden rollers and rafts on the Mahanadi River. This facilitated not only the transportation but also the precise placement of stones during construction. The use of local materials such as Khondalite, Laterite, and Chlorite reflects an understanding of regional geology and resource management.

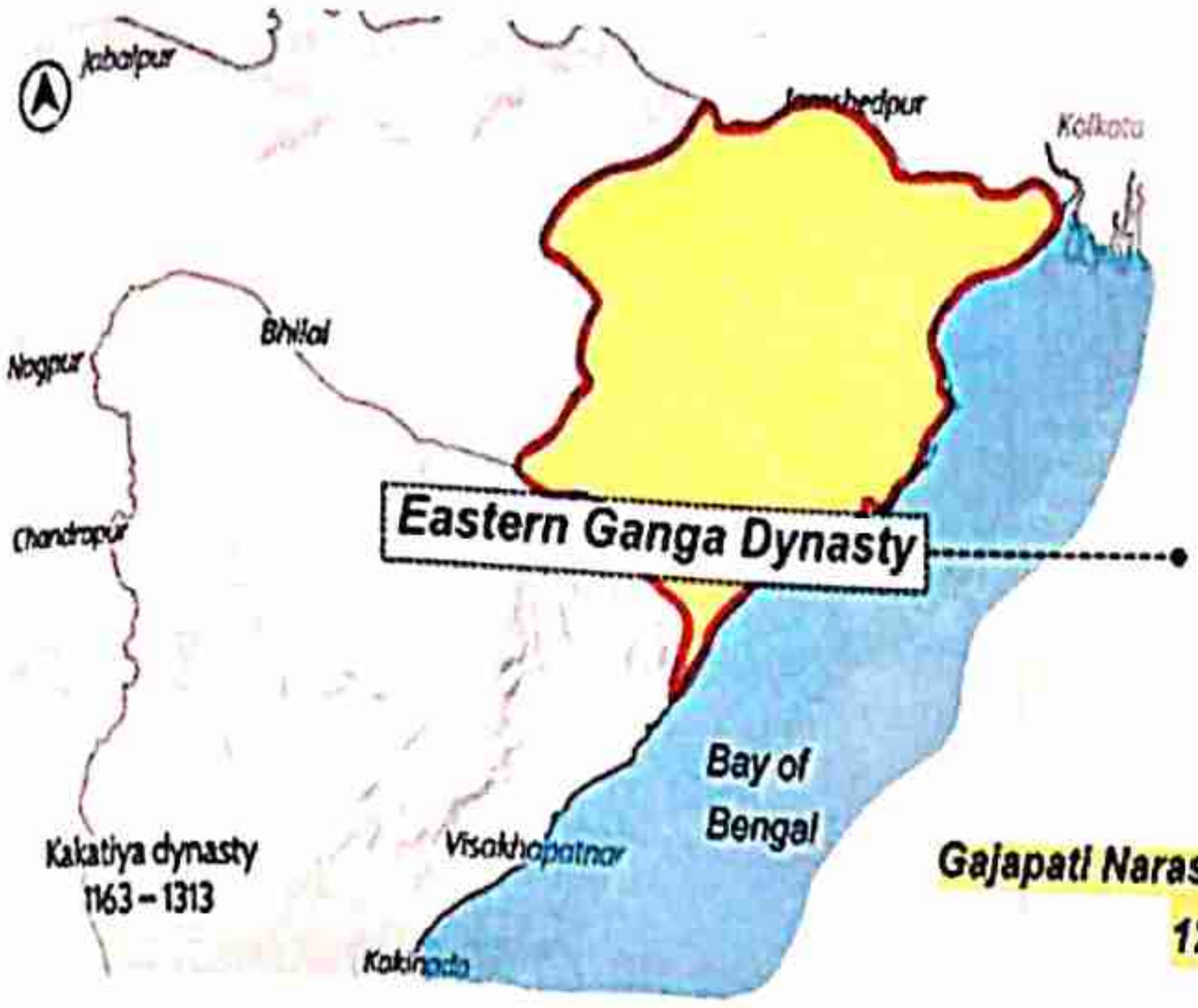
• 493–532	Indravarman I
• 532–535	Anantavarman I
• 804–854	Kamarnava Deva II
• 859–864	Vajrahasta Anantavarman
• 1070–1077	Rajaraja Devendravarman
• 1077–1150	Anantavarman Chodagangadeva
• 1178–1198	Ananga Bhima Deva II
• 1211–1238	Anangabhima Deva III
• 1238–1264	Gajapati Narasingha Deva I
• 1414–1434	Gajapati Bhanu Deva IV
• 1736–1771	Jagannatha Gajapati Narayana Deo II
• 1913–1947	Krushna Chandra Gajapati



Environmental Factors

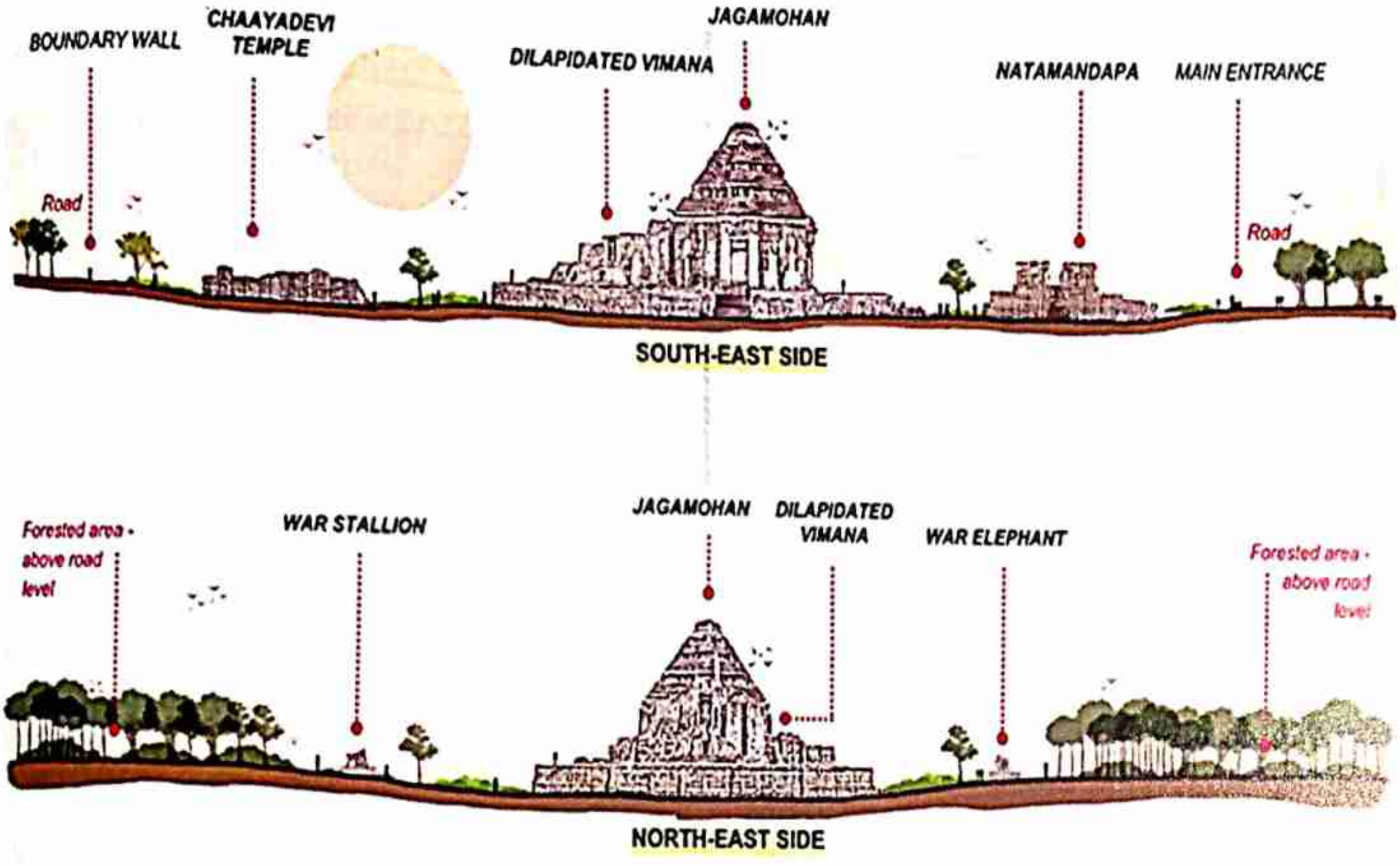
This condition takes place 250 km/hr and above wind speed. Potential damage to structures is caused by:

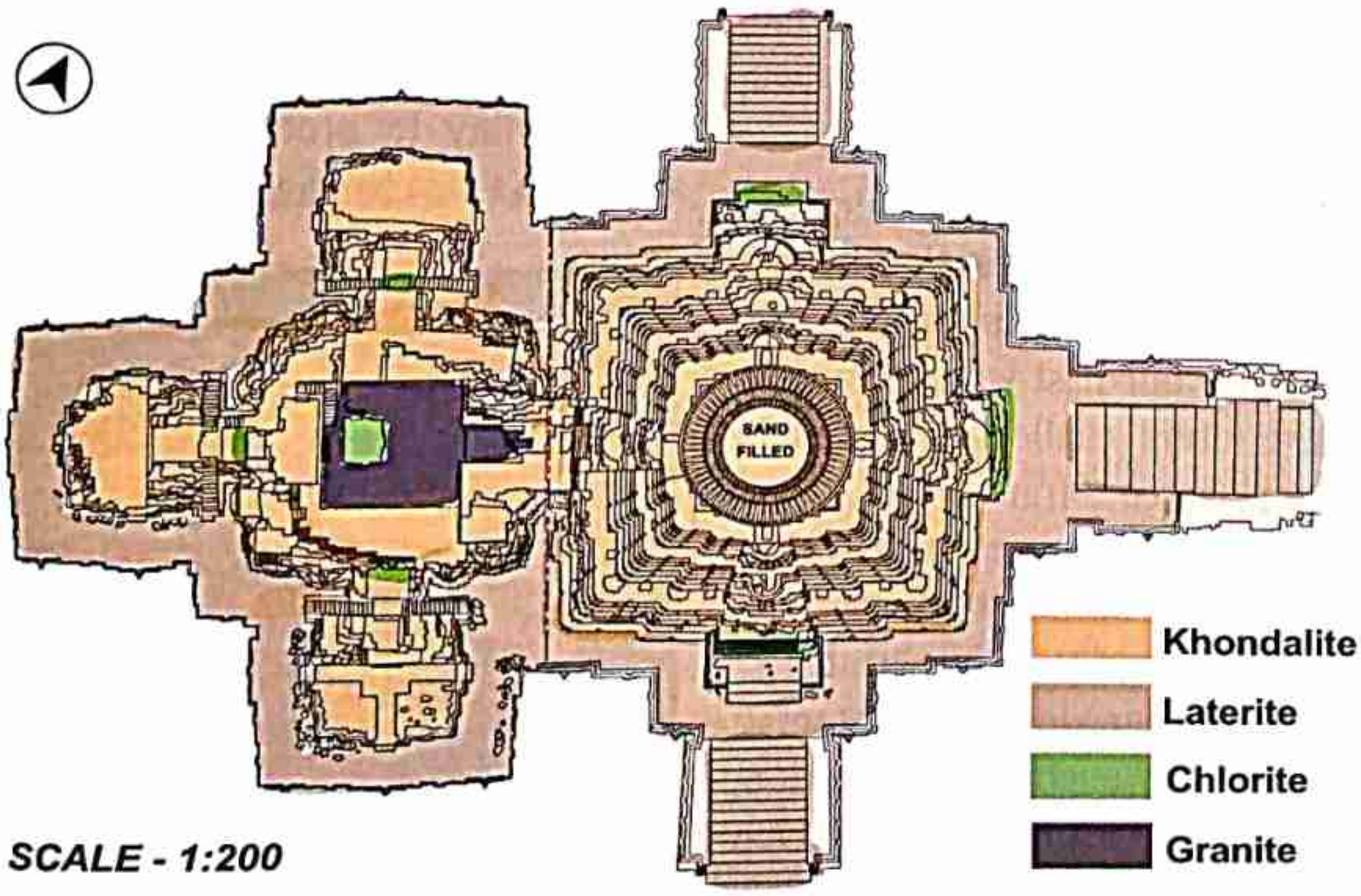
- Destructive winds
- Torrential rainfall leading to flood
- Storm and tidal surges



He along with ***Sibei Samantray Mahapatra, Bishu Maharana*** and ***12000 artisans*** gave birth to the World Heritage Site on the coast of the Bay of Bengal.

Gajapati Narasimha Deva - I (Vira Nara Kesari)
1238 C.E. - 1264 C.E.

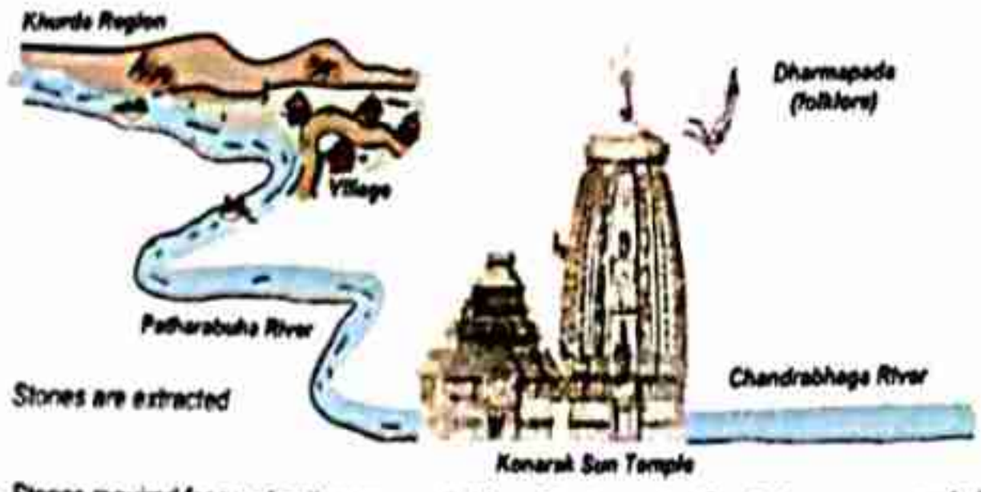




SCALE - 1:200

Conjectural sketches on temple construction

Temple constructed with the help of wooden inclined scaffoldings, pulley and wooden rollers

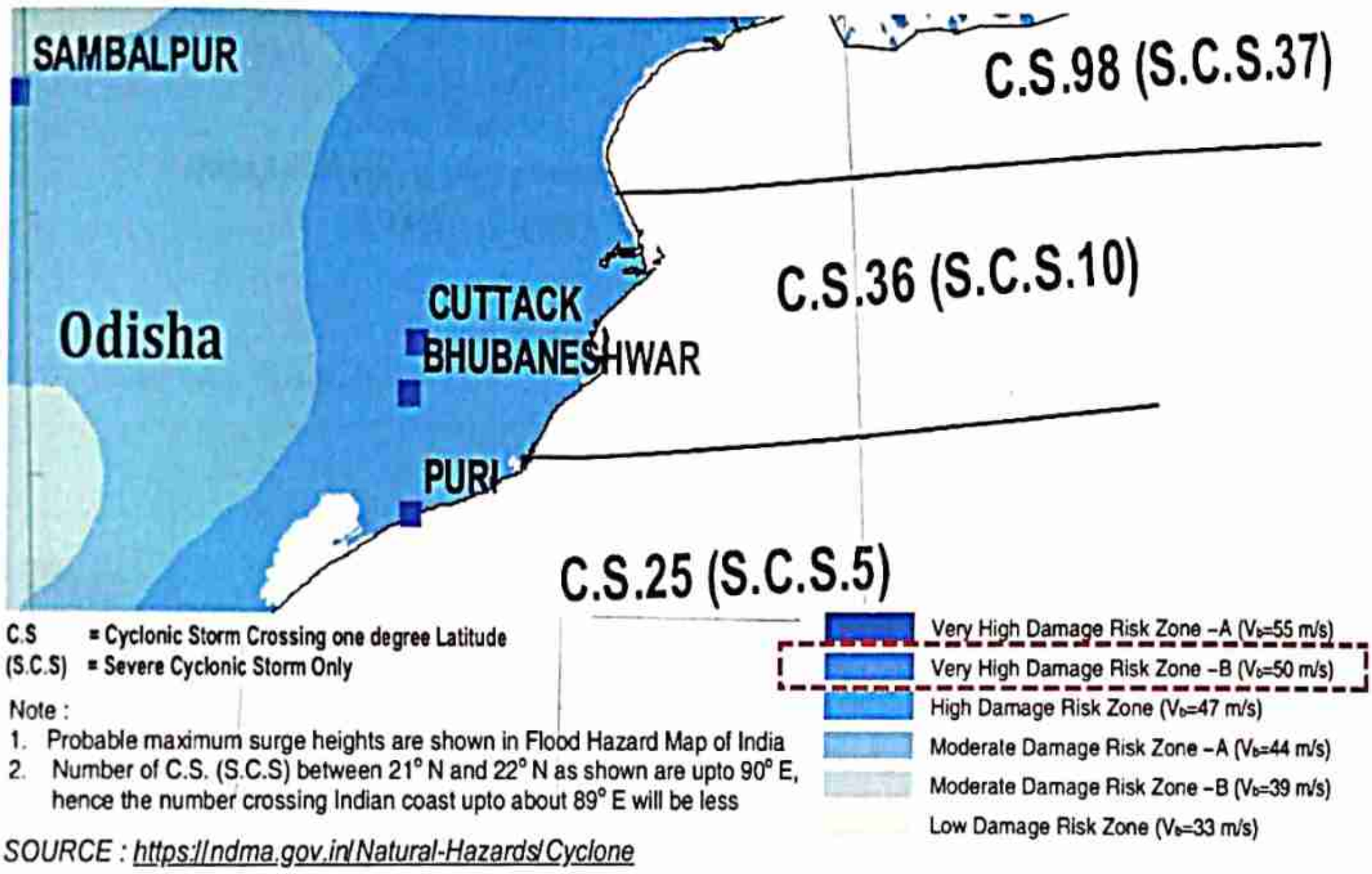


- Stones required for construction are quarried from Khurda region. Small stones were carried by boat whereas huge stones were dragged by men from village to village in bullock carts.
- R. Mahanedi facilitated easy transportation of stones in sloped areas by rafts.
- Carvings were made in-situ after stones were placed in position.

As structure increases in height, the line of slope changes

Temple construction technique involved burying of structure with earth or sand as it progresses in height. On completion sand or earth is removed.

Sculptural panel on southern wall of Sun temple depicting a bull carrying the building material for construction



C.S = Cyclonic Storm Crossing one degree Latitude
(S.C.S) = Severe Cyclonic Storm Only

Note :
1. Probable maximum surge heights are shown in Flood Hazard Map of India
2. Number of C.S. (S.C.S) between 21° N and 22° N as shown are upto 90° E, hence the number crossing Indian coast upto about 89° E will be less

SOURCE : https://ndma.gov.in/Natural-Hazards/Cyclone

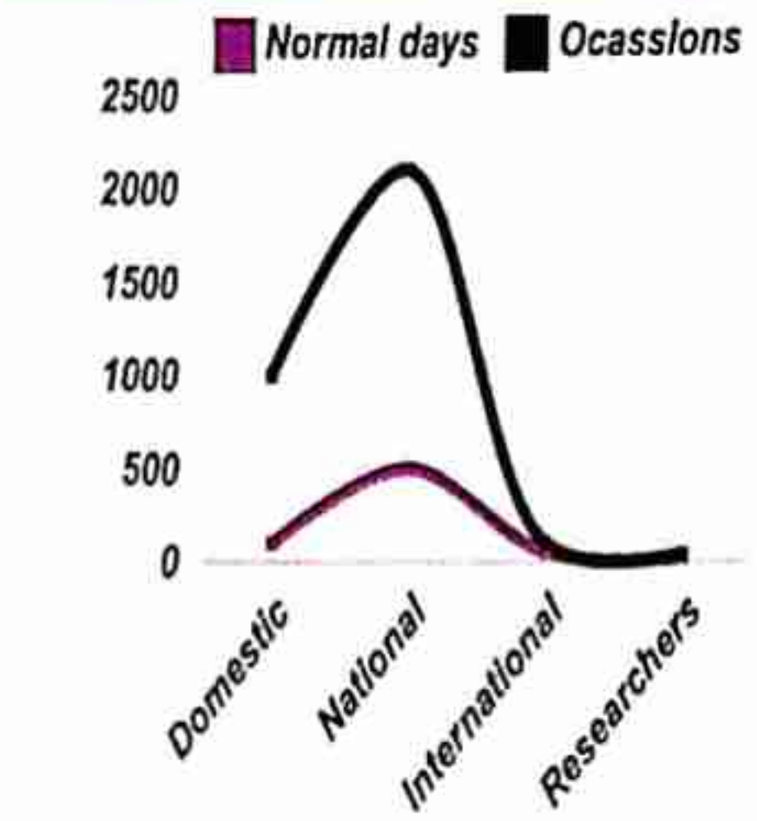
The first cyclone recorded to hit was around 1737 (Super Cyclone).

Cyclone on hitting, vanishes the coastal shelter belt plantation and casuarina forest of Konark. In 1906 a large-scale plantation of the casuarina and pinang trees took place in the direction of the sea to control and minimise the sand drift and the effect of the abrasive action of the salt-laden seawinds.

As we continue to explore archaeological evidence from ancient eras like that found at Konark, we must prioritise sustainable practices that honour our past while ensuring resilience against future challenges. Through comprehensive research frameworks, we can develop more effective strategies for conservation that respect both cultural heritage and environmental integrity. While it faces numerous challenges due to environmental factors and human activity, ongoing conservation efforts are crucial for ensuring its survival for future generations. By addressing current threats and implementing effective conservation strategies, we can safeguard this geo-heritage site as a symbol of India's enduring spirit and creativity.

The legacy of Konark not only enriches our understanding of ancient Indian civilisation but also serves as a reminder of our collective responsibility to protect our cultural heritage amidst an ever-changing world.

SOURCE : Drone image



Proposal based on site observation

- More of ***Casuarina trees*** need to be planted from all sides to shield the structure for further deterioration from sand laden wind.
- ***Neem trees*** need to be planted towards the ***South*** in order to ***distribute the crowd*** and reduce stress on one side of the structure. It will also ***reduce carbon credits*** in one area.
- Small plantation are acting as ***natural barriers and absorbers***.
- ***Drinking points*** for small species to be installed on trees or shaded areas.

Existing trees in the complex

Local Term	English Term	Local Term	English Term
Amba	Mango	Thakunda	Chakunda
Baanian	Banyan	Jamun	Indian Blackberry
Nim	Neem	Bakula	Bakul
Kadali	Peepal	Gambhira	Gambhari
Kaju	Cashew	Supari	Arecanut
Kaajurina/Jhao	Casuarina	Bal	Bael
Deodara	Deodar	Tada	Palm
Gua / Pijuli	Guava	Champaa	Champa
Nadiia	Coconut	Amala	Gooseberry

References

Books

- Mitra, Rajendralala. The Antiquities of Orissa, 2 vols. Calcutta: 1961-2 reprint of 1880 edition.
- Fergusson, James. A History of Indian and Eastern Architecture. London: 1910.
- Swarup, B. Konarka: The Black Pagoda. Cuttack: 1910.
- Thomas, Lowell. India, Land of the Black Pagoda. New York: 1931.
- Bose, Nimal Kumar. Canons of Orissan Architecture. Calcutta: 1932.
- Abu'l Fazl. Ain-i-Akbari. Vol. -II, Translated by H. S. Jarrett and J. N. Sarkar. Calcutta:1949.
- Gangoly, Ordhendra C. Konark. Calcutta: 1956.
- Lal, Kanwar. Miracle of Konark. New York: 1967.
- Mehta, RJ Konark: Sun Temple of Love. Bombay: 1969.
- Mitra, Debala. Konark. New Delhi: 1976, 2nd edition.
- Behera, Karuna Sagar. Konark: The Heritage of Mankind, 2 vols. New Delhi: 1996.
- Donaldson, TE Konark: Monumental Legacy. Oxford University Press, New Delhi: 2003.

Research papers

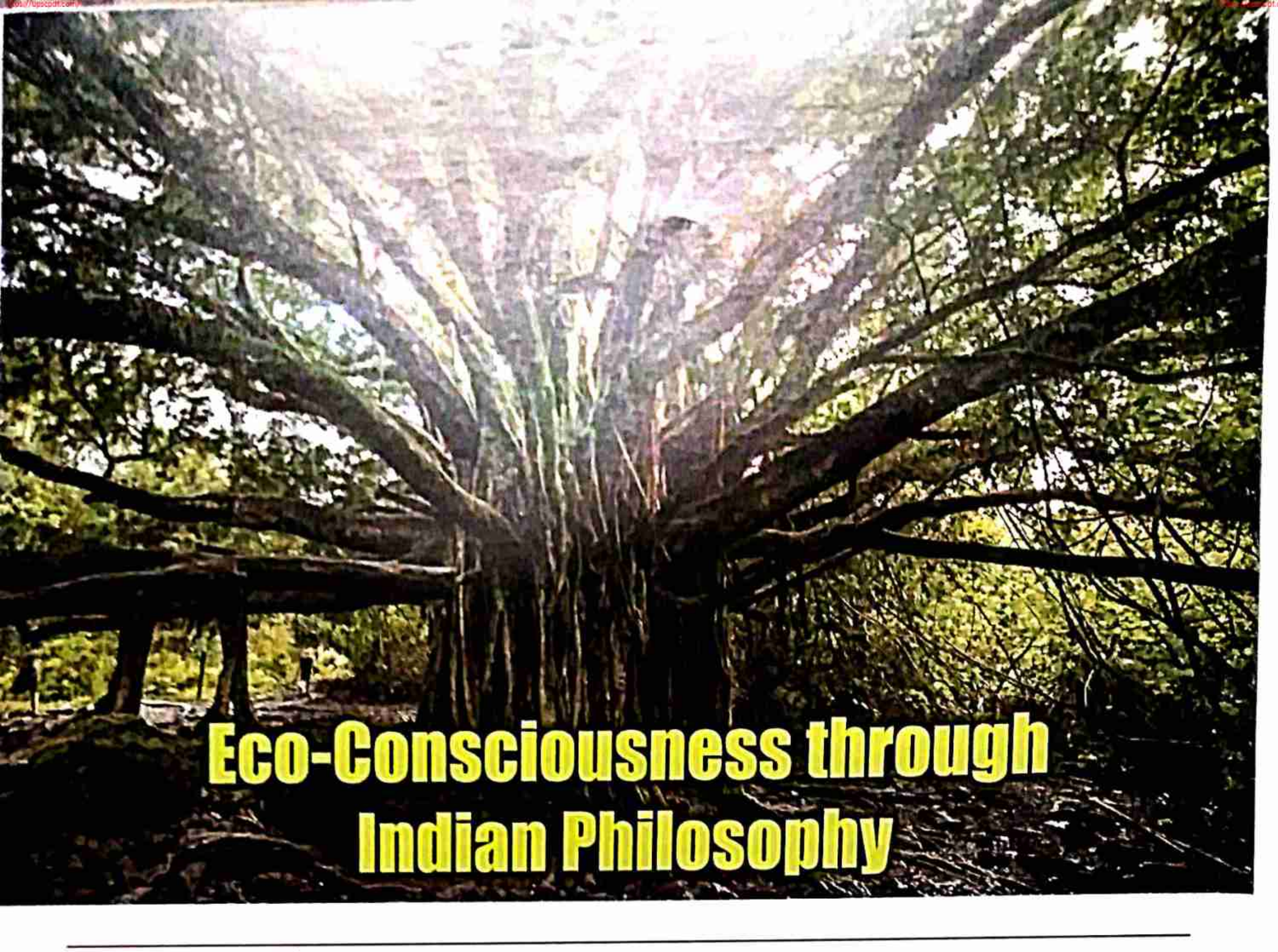
- Mahalik, NK, Geomorphology and evolution of the Mahanadi Delta, India - Journal of Geosciences, Osaka City University Vol. 39, 1996
- Odisha Review -Exploring the lost river(s) of Konark: A muti -disciplinary approach, November 2017
- Samirsinh P Parmar, National Conference on Ancient Indian Science, Technology,
- Engineering and Mathematics (AISTEM-2021), NITTTR Kolkata, India, 19-20 March, 2021.
- Odisha Review -Myths, Facts and Controversies Associated with the Sun Temple of Konark, October 2021

All Images & Maps are provided by the author.

Other Sources

- ASI Library, ASI and IOCL Konark Museum

(Views are personal. The co-authors, Dr DB Garnayak and Dr Siva Sankar Panda, are presently working as the Superintending Archaeologist of Puri Circle and as Deputy Superintendent Archaeological Chemist (DYSAC) at the Bhubaneswar Science Branch with the Archaeological Survey of India, respectively.)



Eco-Consciousness through Indian Philosophy

SHRUTI PARMAR | The author is associated with the Department of Philosophy at Patna University, Bihar. Email: shrutip400@gmail.com

Indian philosophical thought conceptualises the environment not as inert but as a dynamic, interconnected system where humans coexist with other living beings. Historically, Indian culture fostered environmental preservation through moral guidelines rooted in ancient scriptures. Indian philosophy perceives nature as a sacred entity deserving reverence. As we navigate modern life, these insights can guide us toward a more sustainable and harmonious existence.

A recent study[1] highlights a concerning surge in extreme weather events during the first nine months of 2024, resulting in over 3,000 fatalities and significant damage to infrastructure and agriculture. The report reveals that extreme weather was recorded on 93 per cent of days, with Madhya Pradesh experiencing the highest frequency of incidents and Kerala facing the most casualties. Notably, 2024 has already set climate records, including the driest January since 1901 and unprecedented high temperatures. The report emphasises the urgent need for enhanced disaster response systems and calls for climate reparations from high-emission.

In an era marked by environmental crises, the need for eco-consciousness has never been more pressing. The concept of environmental consciousness—an awareness of the interrelationship between human activities and the environment—encourages individuals and communities to adopt sustainable practices. Indian philosophy, with its rich tapestry of thought and tradition, offers profound insights into cultivating this eco-consciousness, emphasising the interconnectedness of all life and the ethical responsibilities humans hold toward nature.

The Philosophical Foundations

Indian philosophical thought conceptualises the environment not as inert but as a dynamic, interconnected system where humans coexist with other living beings. This perspective emphasises understanding and engaging with the holistic natural world, prioritising adaptation as a guiding principle for human – non human interaction. Ancient Indian philosophers advocated for environmental protection as a fundamental human duty, recognising the environment's delicate nature. This cosmic worldview is integral to both oral and textual traditions. While the oral tradition centers on practical application, the textual tradition provides a comprehensive and systematic analysis of the universe.

According to Indian texts, humans, like all material entities, are composed of elements that decompose and return to nature upon death. These nine *tatvas,* or elements, are Earth, Water, Fire, Air, Sky, Time, Directions, Mind, and Soil. Indian mythology describes a phased emergence of these elements: water, earth, and sky first; followed by aquatic animals and birds; then land; air/wind; and finally, fire. Indian thought perceives the environment as a transcendental given, imbued with life in both biotic and abiotic forms. Interdependence is paramount, precluding isolated existence, and the environment is viewed as a benevolent habitat.

Historical Context of Environmental Ethics in India

Historically, Indian culture fostered environmental preservation and conservation through a system of moral guidelines rooted in ancient scriptures and the teachings of seers. These ethical principles, integrated into daily life, influenced the actions of both commoners and rulers. Even minor environmental issues were addressed with specific solutions. The ancient and medieval periods of Indian history were characterised by a deep reverence for nature. Environmental ethics were not merely theoretical constructs; they were woven into the fabric of daily life, influencing the actions of both common people and rulers. The teachings of various philosophical schools and spiritual leaders provided a framework for sustainable living, advocating for a harmonious relationship with the environment.

Ashoka's edicts, inscribed on pillars and rocks in the 3rd century BCE, offer early historical evidence of India's environmental consciousness. These inscriptions, placed in public and pilgrimage sites, prohibited cutting green trees and outlined punishments for offenders. They reflect an understanding of the link between deforestation and atmospheric pollution and disease. Edict No. V, found in Rampurwa, Bihar (243 BCE), provides detailed environmental injunctions, representing an early historical record of conservation practices.

This edict, dating back to the third century BCE, is remarkable for its early advocacy of conservation ethics. It lists protected species, forbids their slaughter and other forms of harm, and promotes forest conservation, recognising forests as vital habitats. The edict's injunctions regarding fish were likely intended to protect them during breeding season. Its focus on conservation is unparalleled for its time.[2]

The Sacred Connection with Nature

Indian philosophy perceives nature not merely

as a resource to be exploited but as a sacred entity deserving reverence. The Vedas, the oldest scriptures of India, articulate a worldview where the natural world is intertwined with the divine. This perspective fosters a sense of responsibility towards the environment, urging individuals to live in harmony with nature.

Trees and their associations with Gods & Goddesses:

Ashoka (*Saraca asoca*)- Buddha, Indra, Vishnu, Aditi, etc.

Peepal (*Ficus religiosa*) -Lord Vishnu, Goddess Laxmi, Goddess Vana Durga, etc.

Tulsi (*Ocimum tenuiflorum*)-Lord Vishnu, Lord Krishna, Lord Jagannath, Goddess Laxmi, etc.

Kadamba (*Neolamarckia cadamba*)- Lord Krishna

Ber (*Ziziphus mauritiana*)-Lord Shiva, Goddess Durga, Lord Surya, Goddess Laxmi

Vata (*Ficus benghalensis*)- Lord Brahma, Lord Vishnu, Lord Shiva, Lord Kal (Yama), Lord Kubera, Lord Krishna, etc.

In contrast, Western traditions often adopt an anthropocentric view, regarding nature primarily as a resource for human use, with little moral consideration for non-human entities. However, a minority perspective within Western thought, known as the stewardship tradition, advocates for responsible care of the earth as a divine obligation.

Indian philosophy also highlights the significance of the non-human world through anthropomorphism, attributing human-like qualities to animals and plants. This is evident in ancient worship practices, such as that of *Pashupati Mahadev*, and in the moral lessons conveyed through tales like the *Panchtantra*, where animals are depicted with human traits to illustrate ethical dilemmas. The reverence for cows, trees, and the association of animals with deities further underscore the intrinsic value placed on all forms of life within Indian culture.

Indian philosophy is deeply rooted in ancient texts that celebrate the harmony between humanity and nature. It posits that humans are not separate from the natural world but are integral parts of it. This perspective is encapsulated in the concept of *Sṛṣṭi*, which refers to the universe as a living system where all entities—animate and inanimate—interact in a complex web of relationships. In this view, even non-living elements are considered to possess a soul, fostering a sense of respect and reverence for the environment.

We get inspiration from the Buddhist approach of living in harmony with nature. Buddhist love and respect for all living beings show the path to environmental protection. Monks who reside in the trans-Himalayan areas help stop the poaching of snow leopards, which is a highly endangered species. Jainism also promotes ecological harmony and states that "you are that which you intend to torture, hit, or kill." Jainism values all life forms equally and respects both lower and higher life forms. As every animal, plant, and human has a soul, they should be treated with respect.

The Sankhya philosophy introduces the concepts of *purusa* (the observer) and *prakriti* (nature), suggesting that true understanding and harmony can be achieved through self-realisation. The Yoga tradition further reinforces this idea, promoting practices that foster a deep connection with nature and encourage individuals to live in alignment with the natural world.

The *Upanishads*, foundational texts of Indian philosophy, articulate the relationship between humans and the environment through the lens of interconnectedness. They emphasise that the five gross elements—earth, water, fire, air, and space—are the building blocks of life, linking human existence to the cosmos. The *Chandogya Upanishad* states, "The earth is the essence of all beings," highlighting the intrinsic connection between humans and the natural world. This

holistic view encourages a lifestyle that respects and preserves the environment rather than exploits it.

Ethical Dimensions of Eco-Consciousness

Indian philosophical traditions emphasise ethical conduct and responsibilities toward other species. The dual dimensions of humanity's relationship with nature—physical and spiritual—underscore the importance of avoiding harm to the environment. This ethical framework is rooted in principles such as *ahimsa* (non-violence) and *karuna* (compassion), which advocate for the respectful treatment of all living beings.

The ancient Indian shastras have long emphasised the importance of environmental governance, a theme that has inspired many great writers throughout history. One notable example is Kalidasa's play, '*Abhijñānaśākuntalam*,' where the character Shakuntala embodies a deep connection to nature, treating it as a nurturing mother. Her actions reflect a harmonious coexistence with the environment, as she shows affection for every tree and plant, even watering them before quenching her own.

The concept of *'Dharma'*, or duty, plays a crucial role in shaping eco-consciousness in Indian philosophy. It encourages individuals to fulfil their responsibilities towards the environment, recognising that their actions have consequences for all living beings. This ethical framework promotes sustainable practices, urging people to consider the impact of their choices on the planet.

The concept of *'Karma'*, which emphasises the consequences of human actions, further underscores the need for eco-consciousness. Hindus regard the Earth as a sacred entity, and actions that harm the environment—such as pollution and deforestation—are seen as disturbances to the cosmic equilibrium, resulting in negative *karma*. Indigenous cultures in India have long upheld a deep eco-consciousness, viewing nature as a living entity rather than an object to dominate. This perspective aligns with the animistic beliefs that attribute spiritual essence to all elements of the natural world. The teachings of these cultures resonate with the Vedic tradition, which emphasises peace, harmony, and responsibility toward the environment.

Conclusion

As we navigate the complexities of modern life, the insights offered by Indian philosophy can guide us toward a more sustainable and harmonious existence. The principles of interconnectedness, ethical responsibility, and respect for all life forms are not just philosophical ideals; they are essential for the survival of our planet. In contemporary society, the challenge lies in rekindling this ancient wisdom and integrating it into our modern lives. The root cause of environmental and social crises often stems from a disconnection between humans and nature. To address this, individuals must strive to regain their eco-self, recognising that their well-being is intrinsically linked to the health of the planet. To foster eco-consciousness, we must educate ourselves and others about the rich tapestry of Indian knowledge systems that promote environmental stewardship. By embracing these teachings and integrating them into our daily lives, we can cultivate a culture of respect for nature and ensure a sustainable future for generations to come. ❑

(*Views are personal*)

References

1. Annual report: Centre for Science and Environment (CSE) and Down To Earth
2. For a more detailed discussion of Asokan inscriptions, see Mookerji 1942
3. Srimad Bhagwatm.
4. Gairola, S U (2020). Review article on relation between Hinduism and environment - A Vedic approach. Asian Journal of Environment & Ecology, 13(3), 19-25DOI: 10.9734/AJEE/2020/v13i330183.
5. Okafor, J O, & Osim, S., Ph.D. (2018). Hinduism and Ecology: Its Relevance and Importance. FAHSANU Journal: Journal of the Arts/Humanities.
6. Renugadevi, R. (2012). Environmental ethics in the Hindu Vedas and Puranas in India. African Journal of History and Culture (AJHC), 4(1), 1-3. DOI: 10.5897/AJHC11.04
7. Vernekar, S D P (2008). Sacred Nature: A Hindu Approach to Environment. Journal of Dharma, 33(2), 205-212.
8. Hasnat, G T, Md Alamgir Kabir, and Md Akhter Hossain. "Major environmental issues and problems of South Asia, particularly Bangladesh." *Handbook of environmental materials management* 1 (2018).
9. Gadgil, Madhav, and Ramachandra Guha. *This fissured land: an ecological history of India*. Univ of california Press, 1993.
10. Krishna, Nanditha. *Hinduism and nature*. Penguin Random House India Private Limited, 2017.

Emotional Intelligence in Public Administration: A Buddhist Approach

TANAVI BEHERA | The author is associated with the National Resource Center of Indian Knowledge Systems for School Education, NCERT
Email. tanvi.behera16@gmail.com

Emotional intelligence (EI) plays a crucial role in public administration, as decisions impact millions of lives in the society. Even while emotions are a natural aspect of being human, effective leadership in governance is really defined by one's capacity to control and direct them. This article explores the critical role that emotional intelligence plays in public administration, going beyond simple emotional responses so as to promote understanding, empathy, and wise decision-making through the perspective of Buddhist philosophy.

> **Anyone can become angry—that is easy. But to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way—this is not easy.**
>
> ***ARISTOTLE, The Nichomachean Ethics***

Researchers have shown that a high level of EI guarantees more success in the development of an organisation.

Emotional intelligence provides a nuanced approach to decision-making that is grounded in self-awareness and empathy. It includes the capacity to recognise, control, and understand one's own feelings as well as those of others.

Emotional Intelligence and Public Administration

The question here arises: Why do we need to discuss EI in Public Administration. If we try to understand the very nature of the term 'Public Administration', it says it is people-oriented administration. 'Public Administrators are not just administrators, and they are not just managers. They are also leaders who have a responsibility to share democratic values, represent a broad range of social groups, and view themselves as more accountable to much broader constituencies than before.'[3]

In order to create communications that successfully appeal to citizens' emotions and concerns and increase public trust and cooperation, EI is essential for a public administrator.

Emotional Intelligence and Buddhist Philosophy

EI cannot be developed unless and until we try to understand which types of mental activities are truly conducive to one's own and others' well-being and which ones are harmful, especially in the long run.

The better way to understand human nature and how one can develop EI is getting delved into the Indian philosophical thought. The hallmark of the ancient Indian systems of thought is their careful inquiry into the nature, function and trainability of the human mind, with the Buddhist philosophical tradition especially excelling in this domain. In order to foster more inner peace, Buddhist teachings cover a variety of methods for regulating the emotions and training the mind.

Emotions influence people's words, thoughts, and actions, and they can sometimes help people seek short-term satisfaction and contentment. But according to Buddhism, some feelings are beneficial for enduring, genuine happiness while others are not.

Understanding how emotions arise, how they are experienced, and how they eventually impact oneself and others is crucial in this regard. Furthermore, one also acquires the capacity to transform and eventually overcome all afflictive states. It is necessary to cultivate and refine the ability to critically evaluate one's own mental processes in order to understand the difference between disruptive and nondisruptive ideas and feelings. In the *Abhidharma Samuccaya*, the nature of the mind and the various mental afflictions are distinguished as non-virtuous (*akusala*) from virtuous (*kusala*).

Buddhist writings on mind science examine the nature of ignorance and how ignorance, which is a distorted form of cognition, leads to inappropriate attention, which in turn leads to afflictions like attachment and aversion. Additionally, it also examines how attachment and aversion lead to other negative emotions such as pride, jealousy, and so forth that disrupt the mental equilibrium. In brief, the Buddhist sources list more than a hundred different mental factors and describe how some of them function as counteragents to other factors. They also explain how the law of contradiction in the mental world makes it possible to eradicate some afflictions by strengthening the potency of their counteragents.

It cannot be the case that mental factors or emotions arise out of nothing. There are definitely certain mental afflictions that work behind it. If we try to understand mental afflictions as defined in the book: Science and Philosophy in the Indian Buddhist Classics: "Mental affliction is a mental factor that functions to disturb the mind stream of the person in whose continuum it occurs."[4] So, our emotions are a reflection of what is happening in our mind.

They have pointed out that there are six root mental afflictions:

- Attachment
- Anger
- Pride
- Afflictive ignorance
- Afflictive doubt
- Afflictive view

The term *kleśa* that is used in Buddhism refers to the mental afflictions that cause suffering. The Buddhist method of eradicating suffering centres

on how we deal with mental afflictions like ignorance, craving, and aversion in order to lessen and ultimately eliminate them. The methods used to train the mind fall into two categories:

- gradually lowering the intensity of negative mental states, such as attachment disorders, and
- establishing positive mental states, such as love, compassion, and wisdom, as habits.

The various methods suggested are the practice of wisdom, mindfulness, meta-awareness, regulating attention, the calm-abiding technique, and many others.

Given the significance of EI in public administration, one of the many techniques for mental training that are taught in Buddhist teachings is how to develop equanimity in the face of the eight worldly concerns. The '*Questions of Ratnacūda Sūtra*' discusses 'the eight worldly concerns as: gain, and loss, fame and disrepute, pleasure and pain, and praise and disparagement.'[5] We frequently see that those working in public administration encounter circumstances where their decisions are influenced by these worldly concerns. The Buddhist teachings have also suggested how one deal with such worldly concerns that are mentioned below:

Material gain, as we know, immerses pleasure, which tends to generate interest to gain more and more till it threatens the peace of mind. As an antidote, be happy with whatever you have by limiting your wants. There must be a way to navigate and manage the growing wants. How to balance the feeling of disliking loss materially? It can be contained by limiting the desire to have the minimum possible, and that can be its antidote. How can one balance liking fame and disliking disrepute? One always strives for fame to get food for a happy life by avoiding disrepute in the process of a decent life. Corrections are required day to day after thorough introspection of attitude and approach to life. How to develop a balance between great liking for pleasant feelings and disliking for painful feelings? One has to start introspecting by thinking if there is a means to change the thing that I dislike, I can do so, and there is no need to be upset; if not, there is absolutely no profit in being unhappy about that unpleasant thing. By overlooking the painful feelings, one can become happy and pleasant. How to develop a balance between praise and disparagement? It is obvious that one derives pleasure when receiving praises from different quarters; that does not insulate one from getting disparaged. Sometimes unsolicited comments help others build a decent life.

With all these methods we can definitely train our mind for the greater good and act intelligently as public administrators. The application of Buddhist ways of training the mind will be extremely important. ❑

Endnotes

1) Peter Salovey, John Mayer, *Emotional Intelligence. Imagination, Cognition and Personality,* Vol.9 (3), Pg-185-211.

2) J. O Neil, *On Emotional intelligence: A conversation with Daniel Goleman. Education Leadership,* 1996, 54(1), 6-11.

3) Robert Kramer, ―Beyond Max Weber: Emotional Intelligence and Public Leadership‖, *Researchgate,* (January:2002)

4) Science and Philosophy in the Indian Buddhist Classics, Vol 2, *The Mind,* Ed. By Thupten Jinpa Contextual Essays by John D. Dunne

5) Science and Philosophy in the Indian Buddhist Classics, Vol 2, *The Mind,* Ed. By Thupten Jinpa Contextual Essays by John D. Dunne, Pg. 445

References

1. Bodhi, Bhikkhu Yanamoli and Bhikkhu, trans. n.d. *The Middle Length Discourses of the Buddha, A Translation of the Majjhima Nikaya.*
2. Daniel Goleman, Emotional Intelligence: Why it can matter more than IQ, Bloomsbury, London, 1996
3. Galmangoda, Prof. Sumanapala. 2012. "An Analytical and Creative Study of the Buddhist Theory and Practice of Psychotheraphy." *The International Association of Buddhist Universities.*
4. Kellner, Birgit. 2019. "Buddhist Philosophy and the Neuroscientific Study of Meditation." *Asian and Asian-American Philosophers and Philosophies* 19.
5. J O Neil, *On Emotional intelligence: A conversation with Daniel Goleman. Education Leadership,* 1996, 54(1)
6. Jinpa, Thupten, ed. 2020. *Science and Philosophy in the Indian Buddhist Classics.* Translated by Dechen Rochard and John D. Dunne. Vol. 2. Simon and Schuster.
7. Peter Salovey, John Mayer, *Emotional Intelligence. Imagination, Cognition and Personality,* Vol.9
8. Robert Kramer, Beyond Max Weber: Emotional Intelligence and Public Leadership‖, *Researchgate,* (January:2002)
9. Silva, Padma De. 2005. *An Introduction to Buddhist Psychology.* London: Palgrave Macmillan.

The Cooperative Approach to Jan Aushadhi Kendras

EESHA PRIYA | The author is an IAS Officer and the Chief Development Officer of Prayagraj Division, Uttar Pradesh. Email: cdopra@nic.in

The Jan Aushadhi Scheme ensures easy access to high-quality affordable medicines through Jan Aushadhi Kendras. Revamped as PMBJP, it offers drugs at 50-90% cheaper rates than branded drugs. The Ministry of Cooperation's initiatives have strengthened PACS, allowing them to open Jan Aushadhi Kendras. Uttar Pradesh has embraced the scheme, with 1000+ cooperative societies applying. The Jan Aushadhi Sugam Mobile app helps users find nearby stores and available medicines. However, challenges like demand-supply gaps and payment delays need addressing for the scheme's success.

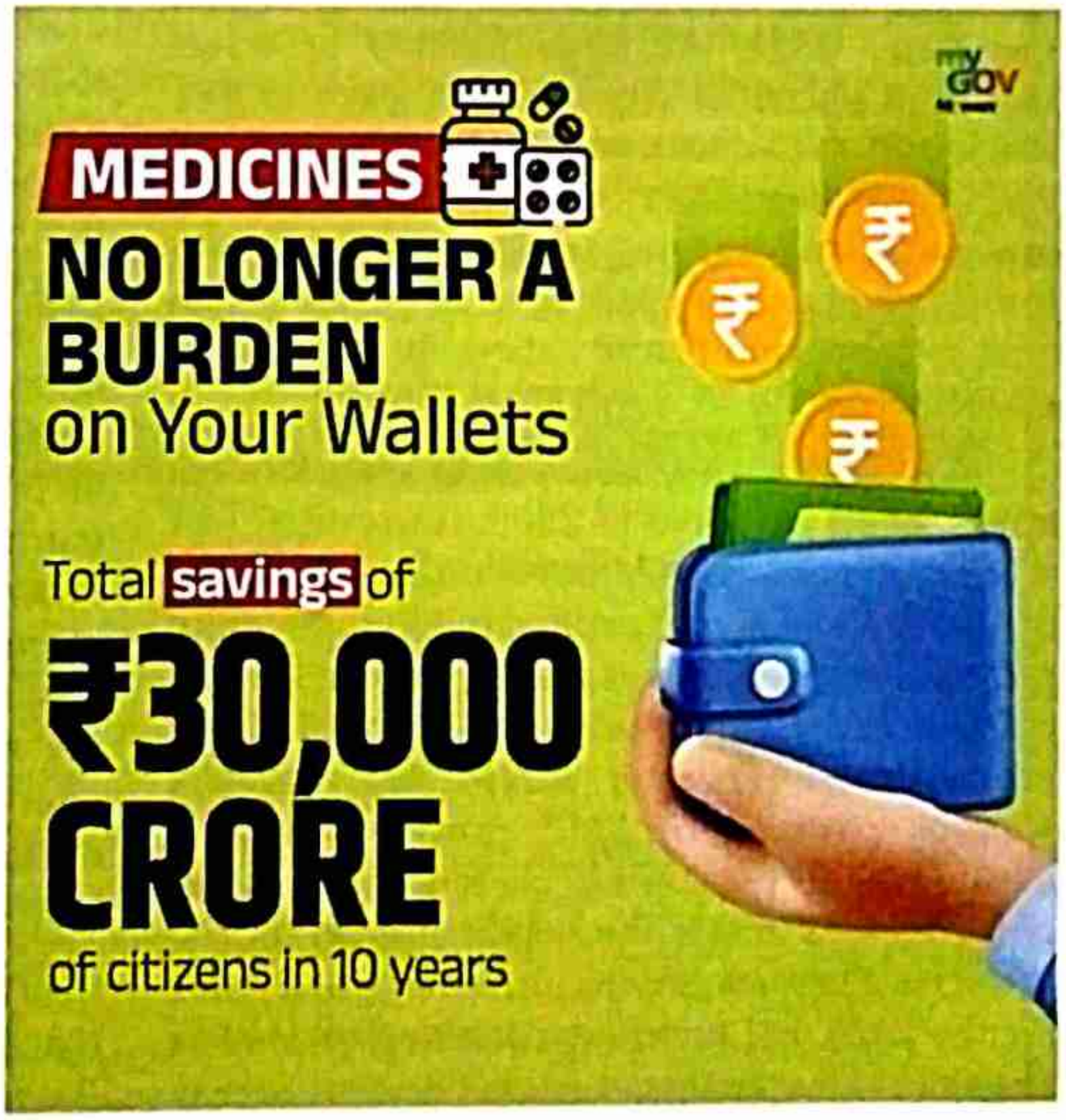
The *Jan Aushadhi* Scheme envisages ensuring easy access to high-quality affordable medicines for all through dedicated *Jan Aushadhi Kendras*. Though it was launched in 2008, the scheme was revamped as *Pradhan Mantri Jan Aushadhi Yojana* (PMJAY) after 2014, and further renamed as *Pradhan Mantri Bhartiya Janaushadhi Pariyojna* (PMBJP) IN 2016.

As per the 71st round of NSSO, the expenditure on medicines accounted for 72 per cent per cent of outpatient expenses in rural areas and 68 per cent per cent in urban areas. A company that develops a particular drug applies for a patent and recovers the research investment by means of royalties. This accounts for the higher cost of branded medicines. Once the patent period expires, the drug can be manufactured as a generic drug with the same active ingredients at a much lower cost by any manufacturer. As per the Press Information Bureau, a medicine under PMBJP is priced on the principle of a maximum of 50 per cent per cent of the average price of the top three branded medicines. *Jan Aushadhi Kendra* offers drugs at rates 50-90 per cent cheaper than branded drugs. The initial premise of the scheme required one *Jan Aushadhi Kendra* to be opened in each district. Around 104 *Kendras* had opened till the year 2014, and 1253 Kendras opened by the year 2017. PMBJP aims to open 10,000 *Jan Aushadhi Kendras* by FY 23-24 and 10,500 *Kendras* by FY24-25.

The Pharmaceuticals & Medical Devices Bureau of India (PMBI) is the implementing agency for the scheme under the aegis of the Department of Pharmaceuticals. PMBJP operates through parallel rate contracts with multiple vendors & suppliers, an SAP-based Inventory Management & Forecasting System, and four warehousing facilities across India, Quality Assurance system in 16 NABL-accredited laboratories to provide a product basket of more than 1800 medicines and 285 surgical equipments.

After the formation of the Ministry of Cooperation in 2021, various initiatives have been undertaken to strengthen the cooperative movement in India under the *Sahkar se Samriddhi* Paradigm. With the adoption of model bylaws by Primary Agriculture Credit Societies (PACS), efforts have been made to improve the viability of PACS and diversify into 25 business activities, including dairy, fishery, floriculture, setting up godowns, procurement of foodgrains, fertilisers, seeds, custom hiring centres, LPG/CNG/Petrol/Diesel distributorship, community irrigation, short-term & long-term credit, Fair Price Shops (FPS), Business Correspondent activities, Common Service Centre, etc. The state of Uttar Pradesh has been a front runner in embracing the *Sahkar se Samridhhi* paradigm, with more than 5200 PACS working as common service centres. More than 1400 PACS have entered into MOUs with FPOS etc. The newest feather in the cap is PACS setting up *Pradhanmantri Bhartiya Jan Aushadhi Kendras*.

PMBJP stipulates that individuals with B Pharma/ D Pharma or any organisation or NGO/trust/institution/public health society employing such an individual are eligible for opening *Jan Aushadhi Kendras*. The government has allowed 2000 Primary Agricultural Credit Societies (PACS) to open *Jan Aushadhi Kendras* across the country in FY 2023. PACS needs to identify shop space and a B Pharma/ D Pharma



pharmacist with a drug license. PACS are free to set up shop in their own space or take up an attractive shop space on rent supported by a proper agreement with owner, the minimum area requirement being 120 square feet. PACS are required to apply on the *Jan Aushadhi Kendra* portal with necessary documents, viz. PAN details, Aadhaar, six months bank transaction details, two years of ITR details, etc., and a fee of INR 5000. After due examination, initial approval in principle is given to the PACS, which is valid for a period of 45 days. On receiving initial approval, PACS need to apply for a drug license. Once the drug license, etc. of the pharmacist is uploaded, a store code is allotted by PMBI. POS software is to be downloaded on the system after proper training; order for the supply of drugs is placed and received using POS software. An incentive scheme of up to INR 5 lakhs at the rate of 15per cent of monthly purchases by the *Kendra*, subject to a ceiling of INR 15,000 per month, has been put in place by PMBI. Also, initial financial assistance to the tune of INR 2 lakhs is provided for IT and infrastructure. PACS receive a margin of 20per cent on the MRP of each drug.

As of date, the multipurpose PACS in the state of Uttar Pradesh have embraced the PMBJP scheme with zeal, and 1000-plus cooperative societies have applied for the *Kendras* within the state. Given the large number of states that applied, initial approval was given to 464 PACS; 300 PACS received drug licenses and 167 PACS were given store code, by PMBI while the process is still ongoing to allot store codes to the remaining. 100 PACS have downloaded the POS software and placed orders for supplies of medicines, while 36 stores are functional.

The *Jan Aushadhi* scheme was a breakthrough intervention launched in 2008. However, it lost much steam due to problems like a lesser number of *Jan Aushadhi Kendras* compared to community pharmacies, poor awareness, less patient load,no pharmaceutical care provided and delayed supply of medicines. *Pradhan Mantri Jan Aushadhi Kendras* powered by PACS provide a unique advantage of registering presence in distant rural markets across the length and breadth of the state. They are serving as a source of income for the PACS and ensuring awareness as well as access to high-quality generic medicines at cheap rates for the poor and needy in the rural areas. PACS *Jan Aushadhi Kendras* have the advantage of a dedicated customer/patient base in its members. The presence of pharmacists in these *Kendras* enables the provision of pharmaceutical care to the patient as well.

The *Jan Aushadhi Sugam Mobile application* developed by PMBI is a citizen-centric welcome initiative as it allows users to search *Jan Aushadhi* stores nearby (via GPS location) and the availability of generic medicines by entering the common brand names of these medicines. Given the presence of PACS *Jan Aushadhi Kendras* in the rural hinterlands, this mobile application has allowed dissemination of information and access to cheap medicines in these hinterlands.

However, the initial enthusiasm of PACS must be coupled with the smooth execution of the scheme. The demand-supply gap is a burning issue with regard to the scheme. Popular medicines run out of stock soon. Also, the delay in the release of incentives and payments is demotivating for the stakeholders. The pharma vendors operating under the PMBJP scheme are supposed to receive payments within a period of 60 days, delay in payments often dent their margins, further adding to delay in supply of medicines.

Sahkar se Samriddhi has provided the much-needed vigor to the Primary Agricultural Credit society. The PACS *Pradhan Mantri Jan Aushadhi Kendras* presents a win- win bargain for the PACS as well as serves the very objective of the *Pradhan Mantri Jan Aushadhi Scheme*. The effective implementation and sustenance of the scheme would entail constant coordination between the Department of Cooperative and The Pharmaceuticals & Medical Devices Bureau of India (PMBI) to ensure PACS are provided much-needed hand-holding in placing timely orders, supply of medicines without delay, and disbursement of incentives. If the initial hiccups are taken care of, definitely PACS-powered *Jan Aushadhi Kendras* could serve as the most effective sustainable model to provide quality medicines at affordable prices to all! ❑

(*Views are personal*)

(The co-author, Rishi Raj, is an IAS Officer and the Municipal Commissioner of Firozabad, Uttar Pradesh. Email: rrajism@gmail.com)

The Art of Weaving: A signature of India that we need to preserve

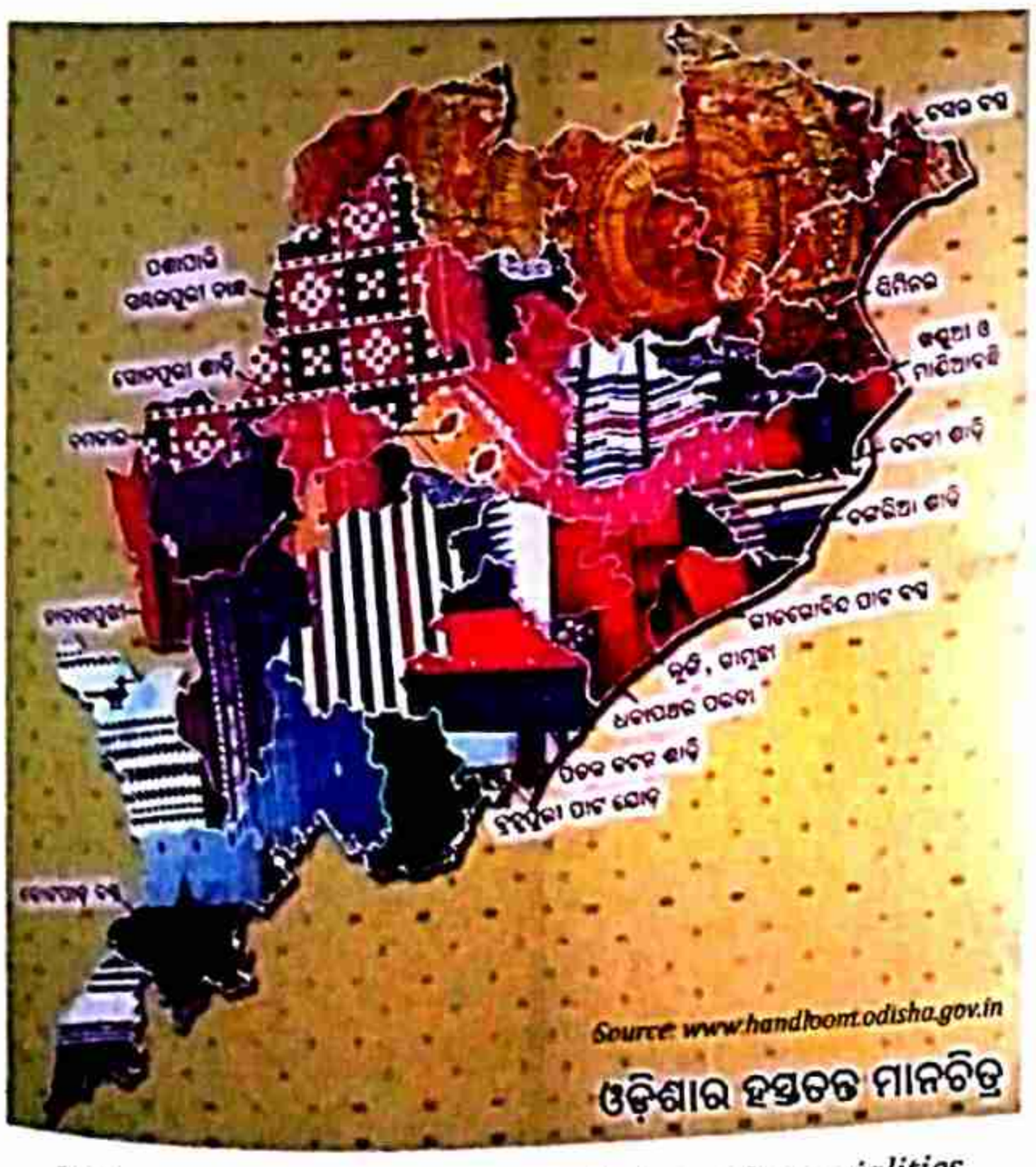
VIJAN KUMAR PANDEY

The author is the former Principal of Patel Inter College, Astauli, Gautam Buddha Nagar, Noida, U.P.
Email: vijankumarpandey@gmail.com

The textile industry in India has a rich history dating back centuries and is the second-largest employment-generating sector in the country after agriculture. Weaving is a time-honoured craft that has been practiced by different cultures around the world for centuries. The PM Mitra Mega Textile Park Scheme 2023, with an allocation of Rs 4,445 crore for seven states, aims to provide an integrated textile value chain and generate about twenty-one lakh new employment opportunities. The Government has also launched the Production Linked Incentive (PLI) Scheme with an approved outlay of Rs 10,683 crore to make the Indian textile industry globally competitive. At present, about 4.5 crore people are directly employed in the textile industry, and about 6 crore people are indirectly employed. Traditional handloom weaving has been complemented by the introduction of modernised looms, significantly boosting productivity. India is the only country that still creates textiles coming from the genius of its master weavers, preserving cultural heritage and providing employment to millions.

Weaving is a time-honoured craft that has been practiced by different cultures around the world for centuries. It is not only a functional skill but also an art form that contributes to the cultural identity of various communities. Throughout history, diverse weaving techniques have been passed down through generations, preserving traditional knowledge and reflecting the rich heritage of different cultures. Each technique holds significance and tells a story, connecting present generations with their ancestors and preserving cultural heritage. Weaving continues to be practiced and celebrated worldwide, both as a means of livelihood and as an art form that defines and represents different communities.

Traditional weaving techniques are often deeply rooted in the history, customs, and beliefs of a particular community. By recognising and supporting these practices, we ensure that cultural knowledge and traditions are passed down through generations. This preservation helps maintain a sense of identity and continuity within the community. Weaving provides essential economic opportunities for many indigenous communities, especially in remote and marginalised areas. It serves as a source of income and sustenance, enabling individuals to support themselves and their families. By supporting and promoting the marketability of indigenous textiles, we contribute to the economic empowerment of indigenous artisans and their communities.



Different regions of Odisha with their textile specialities

The textile industry in India has a rich history dating back centuries. It is playing an important role in the country's economy. Now the importance of this industry has increased further due to the new steps of the government. India ranks second in textile production and is the world's second-largest textile exporter. The textile industry is the second largest-employment generating sector in the country after agriculture. Experts associated with the textile industry believe that to capture the possibilities of growth in textile production and exports created by India's new Foreign Trade Policy (FTP) 2023 and PM Mitra Mega Textile Park Scheme 2023, it is necessary that the challenges being faced should be resolved effectively.

At present the textile industry of the country is facing many challenges. There is a lack of technological upgradation, research innovation and the latest technologies, which is affecting productivity. More than half of the workers in the textile industry do not have new technology skills. Many textile units lag behind many of their counterparts across Asia in terms of infrastructure constraints, and the rate of adoption of new technology is also very slow. Apart from these, issues like high GST on textiles, challenges related to global standards in the export market, and child labour in textile production are seen as hindrances to the rapidly growing textile industry.

PM Mitra Mega Textile Park Scheme 2023

It is noteworthy that the PM Mitra Mega Textile Park Scheme 2023 was implemented with the allocation of Rs 4,445 crore for seven states of the country—Tamil Nadu, Telangana, Karnataka, Maharashtra, Gujarat, Madhya Pradesh and Uttar Pradesh—in the next five years. It is a great example of Make in India and Make for the World. PM Mitra Mega Textile Park will provide an opportunity for an integrated textile value chain from spinning, weaving, processing, dyeing and printing to textile manufacturing at a single site. Each mega textile park will generate about one lakh direct and two lakh indirect employment opportunities. In such a situation, a total of twenty-one lakh new employment opportunities will be

Environmental Sustainability

Weaving with natural fibres, such as cotton, linen, hemp, silk, and wool, is more environmentally friendly compared to synthetic fibers. Natural fibres are biodegradable, renewable, and have a lower carbon footprint. They also require less energy and resources in their production, reducing the environmental impact. Weavers can prioritise sustainable material sourcing by partnering with farmers and suppliers who practice organic and regenerative farming methods. These methods promote soil health, biodiversity, and reduce the use of harmful pesticides and chemicals. Sourcing locally and supporting fair trade principles also reduces transportation emissions and supports local communities. Upcycling and recycling in weaving provides significant potential for reducing waste and promoting sustainable production. By utilising waste or unused materials, weavers can contribute to a more circular economy and reduce the environmental impact of the textile industry.

created. This will provide equal opportunities to domestic manufacturers in the international textile market. Along with this, if we look at the special incentives of the textile industry under the new FTP implemented from April 1, 2023, the PM Mitra Mega Textile Park Scheme was added as an additional scheme to claim benefits under Export Promotion Capital Goods (EPCG). The Special Advance Authorisation Scheme for apparel and textile exports on a self-declaration basis has been extended to facilitate prompt execution of export orders.

To make the Indian textile industry globally competitive and increase quality production and exports, the Government has taken important steps towards creating a self-reliant India and launched the Production Linked Incentive (PLI) Scheme with an approved outlay of Rs 10,683 crore. The Government of India has allowed 100 per cent automation for the textile industry. To make the textile industry globally competitive, the Revised Technology Upgradation Fund Scheme, Integrated Textile Park Scheme and schemes for capacity building in the textile sector have been implemented and are yielding favourable results.

Under the duty drawback scheme, various benefits are being given by the government on exports being made from 23 March 2023. In order to increase the trade of eighteen items of the textile sector, including sarees and lungi, they are

also being given benefits under the exemption of duties and taxes on export products. Not only this, on 11 April 2023, the Textile Ministry has issued quality control orders to produce thirty-one geotextile and twelve 'protective textile' products as per global standards.

It is noteworthy that the textile industry in India has a centuries-old rich history. It has been playing an important role in the economy of the country. Now the importance of this industry has increased further due to the new steps of the government. India ranks second in terms of textile production and is the second-largest textile exporter in the world. The textile industry in the country is the second largest-employment generating sector after agriculture.

Contribution Of the Textile Industry

At present, about 4.5 crore people are directly employed in the textile industry, and about 6 crore people are indirectly employed. Presently the textile industry contributes more than two per cent of the country's total gross domestic product (GDP) and about seven per cent of the country's total industrial production in terms of value and is ready to establish its dominance in the global 'readymade garment' market. Of the total textile and apparel exports from India, a maximum of 27 per cent is sent to America. After this, about 18 per cent is exported to the European Union, about 12 per cent to Bangladesh, and about 6 per cent to the United Arab Emirates.

In such a situation, there is a need to solve the challenges faced by the textile industry to ensure

KNOW YOUR WEAVES

BANARASI JANGLA

Originating from the holy lands of Varanasi, Uttar Pradesh, it is one of the most traditional handlooms. The word Jangla has been derived from the word jungle. In this design, decorative motifs (leaves and flowers) are arranged in such a manner that one creeper crosses another, leaving ground space which also forms a design.

quality production, exports and employment growth in the textile sector in the country. Exports from the textile sector from India have suffered due to preferential subsidies given to countries like Bangladesh and Vietnam. Bangladesh imports Chinese yarn, makes clothes using its cheap labour and exports such clothes to India without any import duty. In such a situation, the duty-free market access given to Bangladesh is facilitating the indirect entry of Chinese textiles into India.

Cheap imports of textiles from China and some other countries into the country are hurting the domestic textile industry in some areas. India, being an emerging market, is also facing the loss of duties imposed by textile-importing countries.

Digital Weaving and Tourism

Digital weaving involves the use of digital technologies to create woven textiles. High-tech looms equipped with sensors and computerised controls allow for real-time monitoring and adjustments, resulting in improved fabric quality and consistency. Digital weaving also enables the incorporation of digital imagery, graphics, and even customised designs into woven textiles. Weaving offers tourists an immersive cultural experience that goes beyond mere observation. Visitors can participate in weaving workshops, learn about different weaving techniques, and interact with local artisans. This hands-on engagement fosters cultural exchange, knowledge sharing, and a deeper appreciation for the craftsmanship involved in weaving. It also promotes cross-cultural understanding and respect.

Handcrafted textiles are popular souvenirs among tourists. By choosing to purchase locally woven products, tourists support sustainable consumption practices. Handcrafted textiles are often more durable and have a lower environmental impact compared to mass-produced, synthetic alternatives. By valuing the cultural and artistic worth of woven textiles, tourists can contribute to the sustainable development of the local weaving industry.

Sri Lanka and many African and other countries enjoy duty-free access to various markets across the world, making Indian textiles comparatively less competitive in foreign markets. Integrating weaving into global supply chains can present both challenges and opportunities. By integrating weaving into global supply chains, there is an opportunity to promote sustainable sourcing practices. This includes working directly with local farmers and producers, implementing fair trade principles, and supporting initiatives that prioritise environmentally friendly raw materials. Such practices not only benefit the weavers but also contribute to the overall sustainability and integrity of the supply chain.

It is necessary to focus on technology upgradation within the textile industry and increase weaving capacity to increase productivity. State Governments are mandated to fix yarn prices for each year to create capital subsidies to expand the market of the textile sector, provide a one-window solution to solve industry problems, and enable a fixed price on yarn on an annual basis. To provide more loans and subsidies to attract young entrepreneurs to the textile sector, to increase research and development in the textile industry, and to train the workforce with new-age skills to meet the new technological requirements of textile production. More support to Indian textile brands to make their products competitive with international brands in the Indian market, trained textile exporters to develop strong customer management systems for Indian exporters in the overseas market and win the trust of global textile traders.

Handloom Weaving

Traditional handloom weaving has been complemented by the introduction of modernised looms. Power looms and automated weaving machines have revolutionised the speed and efficiency of production, allowing for increased output and reduced labour requirements. These advancements have significantly boosted productivity and enabled weavers to meet growing demand. Automation technologies have enabled mass customisation in weaving. Through digital control systems, weavers can easily customise designs, colours, and patterns without compromising production efficiency. This allows for more personalised and tailored products, catering to individual customer preferences and enhancing customer satisfaction.

Undoubtedly, there are great opportunities for the Indian textile industry to grow in the global market and become a major supplier. In such a situation, along with better implementation of various schemes related to the development of the textile industry, there will be a need to meet the diverse needs of indigenous development of machinery and equipment and to harness local skills in design and engineering. By providing training and grants to selected students in major engineering institutes related to the textile industry, they will be trained as skilled workers in the textile industry.

India is home to a rich and diverse tradition of handloom weaving. Handloom fabrics are made using traditional looms and techniques and are known for their beauty, durability, and sustainability. There are many different types of handloom fabrics woven in India, each with its

own unique style and characteristics. The origins of textiles in India can be traced back to 3000 BC, during the Indus Valley Civilisation. Indians then used homespun cotton as the material for weaving their garments. Textiles of Indian origin were one of the major products of trade and business in those times. Silk weaving is an important part of Indian culture. Silk fabrics are worn by people of all ages and social classes on special occasions such as weddings and festivals. Silk is also used to make religious artefacts and other ceremonial items. Silk weaving is also a major source of income for many people in India. The archaeological surveys and studies have indicated that the people of the Harrapan civilisation were familiar with weaving and the spinning of cotton for as long as four thousand years ago. Reference to weaving and spinning materials is found in the Vedic literature.

India is one of the few countries that still creates textiles coming from the genius of its master weavers. The world has lost the hand-weaving and loom process, along with all natural and organic processes of creating textiles. Mill-made fabrics and synthetics largely dominate fashion markets, with China as the main example. India's handloom industry is not the basket case it is made out to be. Its market for both saris and woven fabrics is largely the Indian subcontinent. There is no country that still has an indigenous fashion like India. Japan, China, and countries in South America or Africa have taken to clothing dictated to them by a Europe-centric, multinational-funded fashion world.

Weaving is an ancient method of producing textiles and fabrics

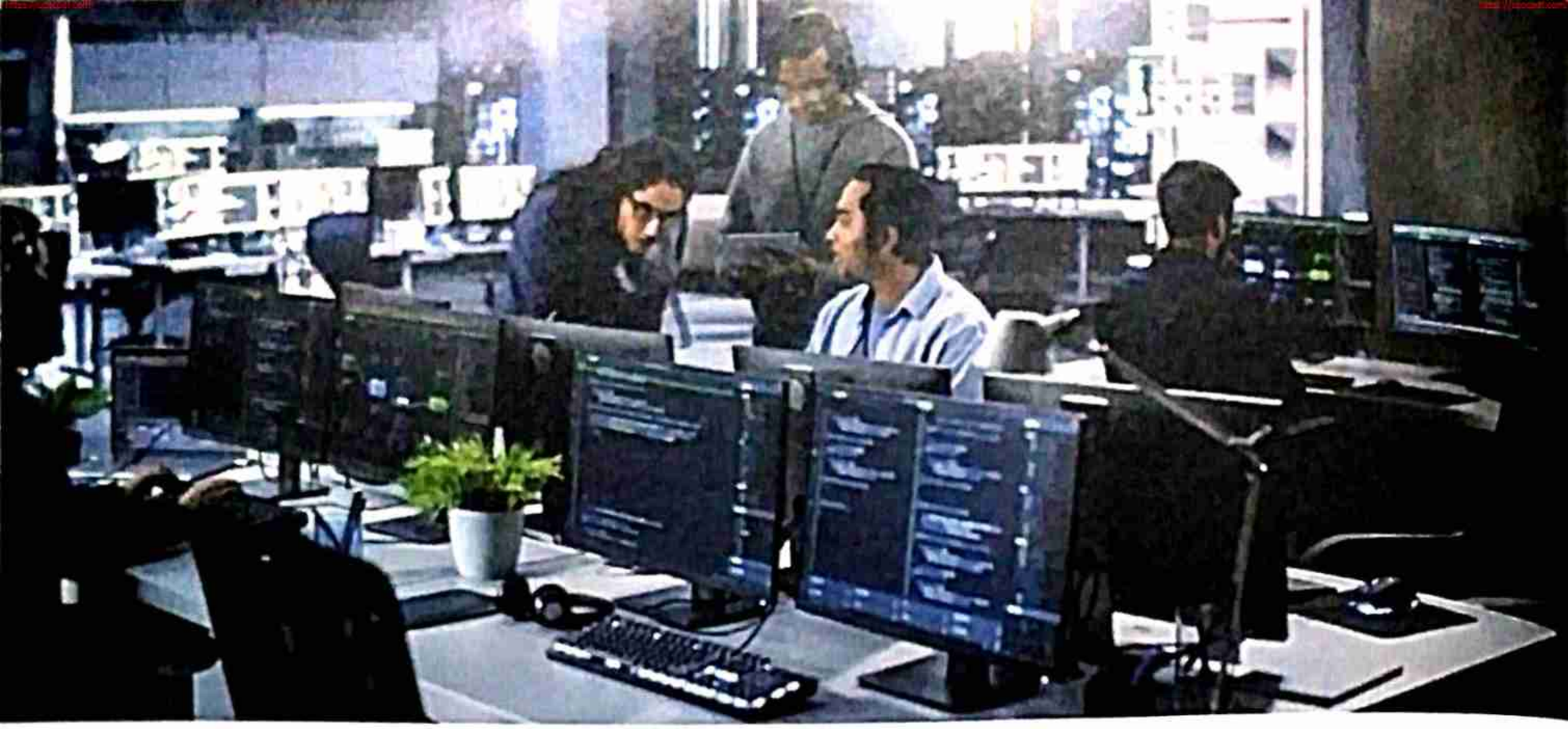
Conclusion

One of the miracles of India is that we still have distinctive fashion handwriting, made by our artisans and designed by Indians. A large part of this miracle is due to the availability of organic textiles and their crafts. The fashion industry is not static. Along with mill-made fabrics, handloom textiles require constant innovation, design inputs and convenience. The Central Government established the Handloom Board in the 1960s to cater to the design needs of this sector. The government and the textile ministry need to refocus on this sector. Weavers Service Centres (WSC) spread across the country are part of a larger infrastructure of the Handloom Board. They are largely lying idle.

There is a need to accelerate development in this sector and not consider scrapping the Handloom Reservation Act that provides protection to handloom weavers. After agriculture, textiles are the largest employment generator in India. Although the share of handloom in production is only 11 per cent and the revenue of the sector is just Rs 2,812 crore, it provides employment to 4.4 million weaver families. The livelihood of our weavers is an endangered part of our textile heritage, and many weavers have committed suicide in recent years. The sector also provides employment to women in poor areas. Women who initially spun only yarn have taken up weaving and have created a unique, potentially prosperous, eco-friendly cottage industry.

Handloom products should be marketed to specific customers who appreciate the value of handmade products and are willing to pay a premium for them. By valuing and supporting indigenous weaving practices, we contribute to the preservation of cultural heritage, economic self-sufficiency, sustainable resource management, cultural revitalisation, and pride. It is crucial to recognise and appreciate the significance of weaving in the lives of indigenous peoples and work towards fostering a supportive and inclusive environment for their artistic expressions and economic well-being. ❑

(Views expressed are personal)



From Outsourcing to Outpacing: India's GCCs Lead the Next Global Revolution

NEW INDIA SAMACHAR RESEARCH TEAM

India has outperformed its global counterparts as a prime destination for Global Capability Centres (GCCs), hosting over half of the world's GCCs with 1,800 centres. Employing over 19 lakh people, the sector's market size has surged to $60 billion in 2022-23, reflecting an 11.4 per cent annual growth rate. GCCs drive significant economic impact, yielding $3 for every dollar invested and creating five times more jobs in the local economy. Supported by initiatives like Ease of Business, Make in India, and Digital India, India's rise as a global hub for GCCs is the result of a meticulously crafted strategy. The introduction of SPICe+ and the Jan Vishwas Act has further enhanced the business-friendly environment. India stays ahead of competitors like Malaysia, Vietnam, and the Philippines due to its robust GCC ecosystem, advanced infrastructure, and abundant skilled workforce. This surge has fuelled growth in real estate, hospitality, retail, and transportation, transforming these regions into thriving business hubs.

India has solidified its status as the Global Capability Centre (GCC) capital, hosting over half of the world's GCCs with 1,800 centres.[1]

Global Capability Centres (GCCs) operate as captive hubs overseeing global functions for companies for a diverse range of activities, including analytics, technology support, product development, and innovation.

With over 19 lakh people employed, India's capability to deliver high-value services on a global scale has been catapulted.

The sector's market size has grown to $60 billion in 2022-23, up from $19.6 billion in 2014-15, reflecting an 11.4% annual growth rate as per a Nasscom-KPMG report.[2]

GCCs are the powerhouse multipliers, yielding $3 for every dollar invested and driving job creation at five times in the local economy for every job created in the GCC.[3]

India has outperformed its global counterparts as a prime destination for Global Capability Centres (GCCs). It offers unmatched talent and ease of doing business. Its rise as a global hub for GCCs is no accident.

It is the result of a meticulously crafted strategy paying off.

How the Centre Leveraged the Opportunity for National Growth[4]

The rapid growth of GCC reflects India's business-friendly environment. Initiatives like Ease of Business, Make in India and Digital India align perfectly with GCC needs. The nation's digital proficiency was also stepped up.

Ease of Business

- SPICe+ (Simplified Proforma for Incorporating Company Electronically) introduction has made the company registration process smoother, cutting down on time and effort.[5]
- In 2024, the introduction of the *Jan Vishwas (Amendment of Provisions) Act* played a key role in reducing compliance burdens.
- This Act decriminalised 183 provisions across 42 central acts managed by 19 ministries, promoting a more business-friendly environment by simplifying rules for entrepreneurs.[6]

GCCs in India from outsourcing to outpacing

Make in India

- GCCs benefitted from India's Foreign Direct Investment (FDI) policies, which allow 100% foreign ownership in many sectors to invest and operate independently.
- The establishment of Special Economic Zones (SEZs) and technology parks has allowed companies to benefit from tax exemptions, such as a 100% income tax exemption on export profits for the first five years, promoting cost efficiency.

Digital India

- Skill India Digital was introduced in 2023 to coordinate the joint efforts of the centre and state to ensure Indian youth are imparted future-ready skills.
- Partnership with private organisations and higher education institutions to upgrade training in digital skills.
- Ministry-level interventions were done to upgrade the AI ecosystem, adding more pace to the initiatives.

India as the GCC capital of the world

> *"India's GCCs are not only growing in number but also in complexity and strategic importance. Over the past 5 years, more than half of these centres have evolved beyond traditional service roles to operate as portfolio and transformation hubs, integrating a broad scope of high-impact functions."*[10]
>
> **– NASSCOM White Paper,**
> *November 2024*

This combination of regulatory relaxations, incentives, and an abundant skilled workforce has enabled India to stay ahead of the game of competitors.

India Became The Choice; For Competitiveness And Value Delivery Beyond Cost Advantage

It has led us to the decade when GCC's competitive advantage has been more pronounced in India due to their ability to move up the value chain, swiftly transforming into innovation hubs and Centres of Excellence (CoEs), concentrating on high-value functions like R&D and IP creation. This competitive advantage enabled competitive compensation at the global level. GCCs are transitioning from cost centres to profit centres.

Facilitated Strategic Geographical Expansion

Many Tier 2 and 3 cities, such as Ahmedabad, Kochi, Visakhapatnam, Jaipur, and Coimbatore, emerged as ideal destinations for MNCs to establish their GCCs. These cities met the lower operational cost requirements of global corporations. The opportunity to tap into a quality, diverse talent pool added more benefits.

It was a win-win situation as this move catalysed local economic growth in these cities, fuelling demand for goods and services and creating a robust ecosystem for innovation and development.

Standout from Competition

India stays ahead of its competitors such as Malaysia, Vietnam, and the Philippines as[7]:

- India leads with a robust and thriving GCC ecosystem, while Malaysia, Vietnam, and the Philippines are still in the growth phase.
- With advanced physical and digital infrastructure, including high-speed internet and state-of-the-art office spaces, India is well-equipped to meet GCC needs.
- Malaysia and Vietnam's sole advantage is restricted to competitive labour costs.
- The Philippines has not been able to rise above offering BPO services.
- Malaysia and Vietnam struggle with talent production relative to that of India.[8]

This surge has fuelled growth in real estate, hospitality, retail, and transportation, transforming these regions into thriving business hubs. Collaborations with startups, universities, and research institutions have further integrated GCCs into local ecosystems, fostering innovation and harmonious operation. The rapid set-up rate, driven by talent availability, cost advantages, and a supportive ecosystem, solidified its dominance. ❑

References

1. https://economictimes.indiatimes.com/industry/services/property-/-cstruction/india-dominates-gcc-market-now-home-to-1800-centres-across-240-million-sq-ft/articleshow/114499480.cms?from=mdr, https://www.thehindubusinessline.com/companies/indias-gcc-sector-to-exceed-22-million-workforce-by-2026-shifting-focus-to-tier-ii-and-iii-cities/article68935127.ece
2. https://economictimes.indiatimes.com/jobs/hr-policies-trends/global-capability-centres-transforming-indias-job-market/articleshow/112583269.cms?from=mdr
3. https://community.nasscom.in/communities/global-capability-centers/indias-success-bolstered-global-capability-centers,https://www.businesstoday.in/opinion/columns/story/india-for-the-world-the-gcc-way-437939-2024-07-20
4. https://assets.kpmg.com/content/dam/kpmg/in/pdf/2024/05/gccs-in-india-building-resilience-for-sustainable-growth.pdf
5. https://www.investindia.gov.in/team-india-blogs/business-friendly-reforms-indias-path-prosperity
6. https://pib.gov.in/PressReleasePage.aspx?PRID=2004714
7. https://www.spag.asia/news-insights/india-gcc-landscape-decoded-the-5-year-report-by-nasscom-zinnov/
8. https://zinnov.com/centers-of-excellence/why-set-up-global-capability-centers-in-india-blog/
9. https://economictimes.indiatimes.com/tech/information-tech/india-inc-too-riding-gcc-wave/articleshow/114261034.cms
10. https://community.nasscom.in/communities/global-capability-centers/whitepaper-indias-gcc-landscape