



## **Indian Indigenous Knowledge System and Sustainability: A Significance Way to Maintain Sustainability**

*Dr. Senapati Nayak<sup>1</sup>, Smt. Rasika Lonkar<sup>2</sup>*

<sup>1</sup>Principal in Charge, Maa Education College, Pamgarh, Janjgir-Champa, Shaheed Nandkumar Patel Vishwavidyalaya, Raigarh, Chhattisgarh, India.

<sup>2</sup>Assistant Professor, DLS P.G. College, Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur, Chhattisgarh, India.

### **ABSTRACT**

Contemporary times are witnessing ecological crises and concerns that have largely reached even the remotest corners of the world, at the expense of growth and developmental programmes. Despite significant improvements in development indicators in terms of health status, education, poverty reduction, technology etc., the world faces the threat of ecological debt and increasing pressure on natural resources globally to meet the demands of development forces and agents. (Agarwal, 2008). The question of sustainability troubles the developing countries of the world like India, which faces constant negotiation and struggle to cope with the growing complexities of the world through large-scale exploitation of its rich natural resources. In this light, it is appropriate to acknowledge the role of indigenous knowledge of local communities which has been the basis of maintaining fragile ecosystems without much recognition and appreciation, given the fact that it is not enshrined in formal institution. India is home to people belonging to different ethnic groups, racial stocks, cultural backgrounds, religious intuitions, social structures, etc., each of whom has their own unique indigenous knowledge system, which is believed to have been passed down over many generations. So that the given can be used permanently. This is especially true for those sections of the population who live close to the ecosystem, such as tribal societies, indigenous communities, marginalized groups, the rural poor and women, etc., in whom forests and natural resources are central to their survival and cosmology. The application of indigenous knowledge is rich and diverse such as water management, agricultural productivity, land use patterns, ethnomedicine, animal husbandry, food preparation/preservation, seed storage, environmental protection, weather forecasting, human health, crop health, food security, and Similarly. Existing research in this area has confirmed the importance of indigenous knowledge in environmental sustainability, while adopting, redefining and integrating these knowledge systems into mainstream policy and programming to enhance overall sustainable development of the world at large.

**Keywords:** Indian indigenous knowledge, sustainable development, life quality, community, innovation

### **Introduction**

indigenous knowledge can be defined as 'the knowledge developed by the local people of a given environment that is transmitted from generation to generation through oral tradition, kinship networks, communal connections, social groups, etc. for the wise management of those resources' On which their daily sustenance depends. Although there is no concrete definition of indigenous knowledge, it has been defined and redefined by many scholars, platforms, organizations, etc. The World Bank (2003) defines indigenous knowledge as 'a large set of knowledge, skills and experiences developed outside the formal educational system' that people apply to develop, improve and sustain their livelihoods. While scholars (Grenier and Mohapatra in Mahalik, 2010) have defined IK as 'the traditional knowledge of a local community that exists and has developed around the specific situations of indigenous men and women of a particular geographical area', while (Basu also states in Mahalik and Mohapatra, 2010) that 'Indigenous knowledge is found in the memories and activities of the people which are reflected in stories, songs, belief systems, rituals, folklore, community laws, local language, cultural values, agricultural practices, physical Are expressed in the form of objects, plant species and animal breeds.' Sharma (2014) states that 'Indigenous knowledge, also called traditional or local knowledge, is embedded in culture and unique to a given place or society, especially in the context of the rural poor whose lives depend on decision making. Based on this. Indigenous knowledge is often called traditional knowledge, local knowledge, community or rural knowledge, farmers' knowledge, tribal knowledge, etc. However, it is appropriate to understand that although the concept of indigenous knowledge has different forms, the meanings may seem synonymous. And moreover, it is not confined or limited to the tribal population or any particular group. In the face of growing inequalities in the environment, ecology and environment around the world, it has been realized that indigenous knowledge systems are an important driving force for sustainable development – 'development that meets the needs of the present without compromising the ability of future generations. (Brundtland Report/WCED Report, 1987, p. 41). It is noteworthy that the world and the indigenous communities living in it have a rich accumulation of knowledge based on their cultures, environment, social, political and economic institutions, natural resources, etc., which according to (Boon & Haynes, 2007) can. 'Key drivers' to achieve poverty reduction, livelihood improvement and sustainability of the given environment. Since ancient times, indigenous communities around the world have co-existed with their own knowledge and cosmology of the environment in which they live – without much appreciation and recognition in the mainstream due to the fact that indigenous knowledge has its roots

outside formal institutions. It was through the United Nations Conference on Environment and Education in 1992, the International Union's World Conservation Strategy and Conservation of Natural Resources in 1980, the Brundtland Commission and the World Commission on Environment and Development in 1987 that the concept of indigenous knowledge became recognized worldwide and its efficacy was realized (Mahalik and Mohapatra, 2010). These events brought out the importance of indigenous knowledge in environmental sustainability and confirmed its existence in every country, community and society contrary to the existing misconception that such knowledge systems are limited only to tribal groups or marginalized sections of the world. The urgency of indigenous knowledge of local communities has recently been felt in the face of growth and development, which has partly contributed to the world's growing environmental problems and ecological crisis at large. Much research conducted in this area has emphasized that indigenous knowledge provides useful frameworks, ideas, guiding principles, practices and measures that can support effective development processes to restore social, economic and environmental resilience of the world at large can serve as the foundation of. Boons and Haynes (2007) emphasized that indigenous knowledge systems incorporate years of analytical and experimental approaches to sustainable development, in areas such as politics and governance, agriculture, health, natural resource management, commerce and industry, etc. Help in reshaping developmental methods. Aggarwal (2008) confirms that indigenous knowledge is resource efficient and effective and that they are able to conserve and manage resources better than the externally imposed, technological and resource intensive management systems that the global world offers today. It is well established that India has a strong and vibrant cultural diversity and each cultural group or community has over the years developed its own knowledge system which was originally passed down through oral traditions. Home to approximately 744 (Census 2011) tribal communities, ethnic groups and diverse cultural backgrounds, India serves as a repository of indigenous knowledge, reflecting a rich but curious mix of knowledge systems. According to the existing literature and research findings, it is estimated that about 70% of the Indian population is rural based in which natural resources play a vital role in meeting the daily needs of the rural poor. People's deep dependence on their immediate environment for their survival and livelihood enables them to develop knowledge about given resources through daily migration, experiences and use of given resources. This is especially true for ethnic minorities, tribal communities, rural populations, women and other disadvantaged groups in India who live close to nature and depend on the available forests and natural resources for their livelihood. It is noteworthy that this close interdependence establishes a kind of sympathetic relationship between local communities and the given environment, which is reflected in their harmonious coexistence and sustainable approach towards resource management. Research conducted by Parajuli and Das (2013) confirms the important role of indigenous knowledge in environmental sustainability, where indigenous communities around the world are conserving biodiversity to sustain themselves which ultimately preserves the entire environment. However, when it comes to natural resources policy making and developmental planning, the most important voices are often unheard – the voices of local communities who are the bearers of broader ecological knowledge of the ecosystem (Kumar, 2001). India's tribal communities and other ethnic groups are exposing structural elements and issues that are leading to the erosion of indigenous knowledge of local communities at large.

### **Application of indigenous knowledge in Indian context**

Indian Knowledge System (IKS) is the transmission of knowledge from one generation to the next. This is a well-structured system and process of knowledge transfer, not just a tradition. Vedic literature is it is considered the source of Indian knowledge tradition. Upanishads, Vedas and Upvedas are all parts of Indian knowledge system. India talks about Vasudhaiva Kutumbakam which is an idiom Hindu text Maha Upanishad. We believe in ॐ अम सर्वेभर्वन्तुसुखिनः । Pashyantuma Kanitaduh Bhagbharvet ॥ ॥ Om ShantiH ShantiH ShantiH ॥ .India has a very glorious past where we were Rich in all aspects of art and culture, science or medicine, astrology or mathematics. The contributions to almost all areas of intellectual inquiry have been immense and the focus has been on sustainable development. The Indian education system believes in the existence of life in all things in the universe. Our Vedas treated Nature is like God where plants like Neem, Tulsi, Peepal etc. are also worshiped and propagated. To plant trees. India has always been a center of knowledge with world's top universities like Nalanda Takshashila and Magadha universities were established and education in all subjects was given here. the Indian Knowledge systems consisting of knowledge, science and philosophy of life have developed from experience, Observation, experimentation and rigorous analysis.

With a large portion of the population in India engaged in the agricultural sector, there is no doubt that most of the country's land is occupied by small-scale farmers, subsistence cultivators, herders, hunters, gatherers, etc., who exploit the forests and available Many depend on forest products. A given environment depends on their locally relevant knowledge systems. According to the 2011 census, it is emphasized that almost half of the total employment in the country's economy is generated in the agriculture sector which provides livelihood and livelihood to more than 70% of the people living in rural areas. This confirms that the forest and the natural resources available in it are not only a source of food, fuel, fodder, medicine, meat, etc., but it is also the home of millions of rural poor on which their daily narratives and cosmology are built. Indigenous knowledge is multidimensional and hence a wide range of knowledge systems can be found in agriculture, forestry, medicine, human health, plant and animal life, land patterns, water conservation, food security, etc. A recent study conducted among marginal and small-scale farmers in Bihar by Mishra, Singh and Kumar (2011) examined the use of indigenous knowledge in crop management practices (such as mixed cropping of turmeric, potato and chilli to increase production of all three). A vivid picture has emerged. ), grain storage practices (for example Neem leaves are used in storage to protect grains from insects and pests), crop monitoring practices (for example - construction of elevated platforms or 'scaffolding' made of wooden poles, (using local grass, paddy straw and crop residues) to protect crops from wild animals and birds), prediction of weather/climate conditions (local farmers predict heavy rains when ants carry their eggs in their mouths), soil health and fertility management (farmers use farm-based manures and green manures instead of chemical fertilizers to increase soil fertility and food quality), plant and animal disease/health (farmers It is believed that the application of a paste of the vine relieves the pain in the shoulder of a working ox, while a mixture of turmeric, ginger and garlic keeps the feet in good condition, and diseases of the mouth are cured), human health practices (e.g. The common practice of planting Peepal and Tulsi trees in and around the residential area produces oxygen/O<sub>2</sub> which is considered beneficial for all living organisms, or use turmeric, onion, dal for relief from any type of pain. Applying lukewarm paste of grass and mustard oil. Although local

farmers are implementing simple measures and biological knowledge to conserve and maintain the sustainability of the environment, it is still stressed that such measures need to be taken especially to accommodate the modern technology coming into the farming system. Existing things dating back centuries have been ignored or side-lined. Near water sources, steep slopes and other ecologically sensitive areas (Tiwari et al, 2010). These forest areas are home to rich aquatic as well as terrestrial biodiversity and sustain diverse species of medicinal plants and animals, wild food, herbs and many other economically important resources. Such traditional conservation of forest and forest cover not only helps in conserving biodiversity and natural resources, but also serves as a 'safety net' and 'resource land' for communities because, according to local belief, the land is sacred. Forest is the home of one. Deities who protect the village from natural disasters, famine and diseases by providing vital needs in daily life such as fuel, food, building materials, water, medicinal herbs, edible plants etc. (ibid, 2010).

A similar study conducted by Madegowda (2009) among the Soligas tribes of Chamarajanagar district, Karnataka reveals a rich traditional knowledge of their ecology, forest conservation, agricultural systems, land use patterns and other resource management etc. on which their A complex web is created. Social, cultural and economic life is created. The study shows that about 62 colonies of Soliga are located within and on the periphery of the Biligiri Rangaswami Temple (BRT) Wildlife Sanctuary and as a result they have had a continuous and close relationship with the forest meeting most of their basic needs such as food. Fodder, fuel, fruits, medicines, herbs, etc. The Soligas practice controlled ground fires, which they believe is good for invasive species control, regeneration of local indigenous species, seed dormancy, controlling pests and diseases, and regenerating food for wildlife. They also practiced shifting cultivation in which they cultivate the land for one or two eras until the soil loses its fertility and then they move to another piece of land. As they move forward, they provide food like banana, tapioca, cucumber, gourd, pumpkin, tubers, mustard etc. which they leave for the wild animals in an effort to conserve and balance the biodiversity. It is also emphasized that this tribal had good water management practices and hence whenever they cleared land for shifting cultivation, they would dig two or three pits/wells on the side of the field for consumption and irrigation. They also served as a source of water for wild life. Furthermore, the Soligas have rich folklore through which they reflect the indigenous knowledge of fauna, flora, dense forests, waterfalls, flowers, canyons, etc., as well as the way they transmit this knowledge from one generation to the next.

Let's enable that, and that helps. The works of Gupta (2000) clearly describe the ecologically sustainable practice of land and forest cover among the tribal communities of Tripura, north-east India, through shifting cultivation and the concept of 'sacred groves'. In Tripura, shifting cultivation is deeply integrated into the social, cultural and economic lifestyle of many tribal groups, who constitute about 31% of the total population of the state. In traditional shifting cultivation or 'jhuming', the period of fallow land was about 20 to 25 years long and sustainable and mixed crops like cereals, seasonal vegetables, fiber and tree crops were cultivated which provided permanent rich soil cover. Does it. Apart from a variety of food crops and other products. Furthermore, some virgin forests or patches of land or forest cover were set aside as 'sacred groves' to keep track of land use. Local farmers also adopt various soil conservation measures that increase soil fertility as well as help in regeneration of fallow lands through germination of seeds from cultivated plots and cut trees (ibid, 2000). However, due to increasing pressure of population, immigrants, demand for food etc. this traditional Jhuming practice is no longer the specialty of the tribal society in Tripura which adversely affected the fallow land, soil quality, traditional approach to water channel, land etc. Is. The current farming system is called 'non-traditional jhumming', which is characterized by short fallow periods which is not sustainable. In this light, it has been suggested that solutions may lie in improving existing non-traditional jhumming or replacing it with other viable economic and ecological alternatives or integrating traditional knowledge into policy and planning. Similarly, the same fate of traditional agriculture is seen by local villagers in Ladakh, which lies within the Western Himalayas in the Indian state of Jammu and Kashmir.

The traditional agricultural system of Ladakhis is characterized by a careful system of crop rotation, organic waste management, recycling of nutrients through the use of livestock for plowing and threshing, and no use of chemical fertilizers, which leads to high quality yields. (Engels and Tarbotton, 2001). But it has been found that this traditional farming system is in the process of degradation with the introduction of chemical fertilizers and high yielding varieties (HYV) by the Government of India, leading to decline in soil fertility and structure. This has not only threatened the traditional ecological knowledge of the people but has also caused structural changes in their socio-cultural system at large. While in the central part of India, an indigenous organization of Van Suraksha Samiti (VSS), literally meaning 'Forest Security Committee' of Suali village in Udaipur district of Rajasthan, is contributing to the conservation of forest and natural resources with the help of religious institution. Gives. (Agarwal, 2008). This institution is headed by the traditional head of the village, Mokhi, who oversees the overall management of the forest in accordance with the institutions' rules for the protection and harvesting of timber and other forest products. It is said that due to the problems of rapid degradation and depletion of forests in recent years, VSS closed the forest for about 7 years with the help of religious rituals of 'Kesar Chidkav' or 'Saffron Sprinkling', in which VSS members were involved. They brought sacred saffron from Kesariya Ji temple and sprinkled it in the forest along with some other rituals after which it was declared closed (ibid, 2008). It was believed that anyone who violated this rule would not only face the wrath of God but would also be socially ostracized by the Mokhi, leading to degradation of forests and resources, which was discouraged due to ecological concern and religious belief. The famous 'Chipko movement' reminds us of the ecological movement started by local people, especially poor women, in response to the large-scale exploitation of the environment and resources on which their livelihoods are intrinsically linked.

The exploitation of forest resources by rich and influential contractors endangered the social, economic and cultural life of the hill people, leading them to take into account the future implications of the fragile ecosystem and the world famous Chipko movement (Bandhopadhyay). Keeping this in mind, he opposed the commercial felling of trees. 1992). According to Kumar (2006) the impact of the Chipko movement made many people realize that the participation of local people or community participation against commercial forestry with special reference to rural women not only protected the ecology and environment but also helped in improving the world's influence on the environment. Consciousness also developed. Recent initiatives by rural women in Uttarakhand, India confirm women's active participation in the environmental movement against the backdrop of increasing global climate change. Here, women play a vital role in reviving and preserving civic forests facing many obstacles, such as women members in panchayat taking initiative to encourage planting of broad-leaf trees to increase oxygen levels in the environment are (Bishnoi, 2014). The growing role of women on the environmental

front has been justified by rural village women in Jharkhand by promoting sustainable community farming in the face of exploitative moneylenders, land grabbers and land degradation (Sinha, 2014). In the small tribal village of Paharpur, Jharkhand, the only educated woman in the village who had completed her schooling was distressed to see people of her community abandoning farming due to huge losses, dry land, land grabbing and migration etc.

To stop the trend of migration, she associated herself with a self-help group and taught community farming to other women of the village. With their collective efforts they were able to convert dry and rocky land into cultivable land, resulting in reduction in the rate of migration of the villagers, who are now enjoying a proportionate increase in their collective prosperity. Today the village is economically secure, food security is assured and children are able to go to school which was not possible earlier due to seasonal migration. Studies have also shown that humans have co-existed with wildlife for a long time and hence wildlife conservation approaches cannot be successful without concerted efforts and participation of local communities living in and around the forest area. In support of this, the latest lion census conducted in Gujarat shows that the number of cats has increased by 27%, now standing at 523 compared to 411 in 2010 (The Hindu Times, 2015). Forest officials admit that such a positive scale could not have been achieved without the support of the Madharis, a nomadic tribe of pastoralists and farmers living around Gir National Park. It is said that the lions help control the populations of nilgai and wild boars that often destroy standing crops thereby benefiting local farmers while humans have protected the lions from poachers when they hunt cattle. If they do, they resist retaliation and even build parapets. Walls should be built around farm wells to reduce accidental deaths of lions by falling into them. As a result, it is emphasized that the ultimate relationship and interdependence between humans, wildlife, natural resources and biodiversity must be acknowledged and conservative approaches must be applied accordingly to benefit the ecosystem at large.

All these activities have placed indigenous and tribal communities at the centre of environmental and development debates for decades, advocating for simple, sustainable and locally available resources/knowledge for the conservation of the earth system. These studies validate existing research findings of the role of indigenous knowledge in environmental sustainability, although limited attention has been paid to how it is addressed in the face of incoming global forces and markets. It is well established that indigenous communities around the world have naturally developed knowledge systems to make judicious use of available resources so as to enhance the sustainability of the environment from which they obtain their basic needs. A global concern for environmental sustainability led to the United Nations Conference on Environment and Development (UNCED) held in Rio in June 1992, which stated that 'humans are central to concerns for sustainable development and indigenous communities have a say in environmental management. Important role and development because of their ecologically sustainable knowledge and attitude towards the environment (Singh and Khare, 1993). The declaration of this platform calls on the world to recognize and appropriately support the identity, culture, traditions, knowledge systems and interests of the world's indigenous communities for their effective participation in achieving the goal of sustainable development.

However, these knowledge systems, in contemporary times, are highly sensitive to global forces and markets, modern science and technology, developmental initiatives, impacts on traditional religion, the emerging concept of intellectual property rights and private property, environmental problems, non-human rights, non-violence, and human rights. Knowledge transfer, gender inequality, power struggles, and bio-piracy, etc. Several emerging studies have argued that global oriented markets compel many countries (especially developing countries like India) to promote development policies that focus on rural-based industrialization and use of chemical inputs, biotechnology, increase agricultural productivity through mechanization etc., which has not only marginalized traditional agriculture. The system also undermines local farmers and their indigenous knowledge (Engels and Tarbotton, 2001). The development of commercial forestry has also contributed to the erosion of indigenous knowledge in many parts of India, especially in the north-east region, where land is being rapidly cleared to meet the need for fuel, building materials and to accommodate the growing population. Being cleaned. Indigenous knowledge is also susceptible to misuse and abuse by modern science and rich technological bodies due to its accessibility and efficacy, especially knowledge related to treatment of various diseases, cosmetics, medicinal properties etc. Therefore, traditional knowledge is being exploited. The form of 'bio-prospecting or bio-piracy' is a threat to the indigenous community and their knowledge system in which the indigenous knowledge of the communities is misused by scientists from developed countries to develop certain medicines etc. without acknowledging the intellectual property. Rights of rightful communities (Baig and Pramanik, 2012).

It is appropriate to acknowledge the fact that the influence of the modern worldview and the influence of other religions also contribute to the destruction of indigenous knowledge through the destruction of the traditional concept of 'sacred groves' and 'sacred forests or places'. Have roots. In the traditional religion of nature worship and animist religion. For a long time, these indigenous knowledge systems of local communities around the world have largely sustained the fragile earth system by obtaining their basic needs from their own resources. It is well established that this indigenous knowledge or ecological knowledge not only fulfils their daily needs but also forms a major part of their economy, social, cultural and religious institutions. Vedic literature is considered the source of Indian knowledge tradition. Upanishads, Vedas and Upavedas are all part of the Indian knowledge system. India speaks of Vasudhaiva Kutumbakam a phrase from the Hindu text Maha Upanishad. We Om Sarvebharvantusukhinah. Sarvesantunnaramayaah. Sarvebhadraani pashyantuma kanitduhhi bhagbharvet. Om shantih shantih shantih. Believe in. India has a very glorious past where we were rich in all aspects be it art and culture, science or medicine, astrology or mathematics. The contribution of ICT to almost all areas of intellectual inquiry is immense and focuses on sustainable development. The Indian education system believes in the existence of life in all things in the universe. Nature is considered God in our Vedas, where plants like Neem, Tulsi, and Peepal etc. are also worshiped and promoted. India has always been a centre of knowledge where the world's top universities such as Nalanda, Takshila and Magadha Universities were established and all subjects were taught here. Indian knowledge systems consisting of knowledge, science and philosophy of life have evolved from experience, observation, experimentation and rigorous analysis.

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### **Indian indigenous knowledge for Sustainable Development**

Harmony between humans and the environment creates a healthy ecosystem. This knowledge system of ancient Indians has been prevalent for centuries and thus is time-tested and proven. Traditional or indigenous knowledge refers to the knowledge, skills and practices kept by local people. Due to rapid

and hasty industrialization and modernization. Traditional knowledge systems are today on the verge of degradation. Visualization of development plans should be done keeping in mind the science and knowledge rooted in culture and traditions. Conservation and management of natural resources must reflect local and indigenous ideas and practices. Utilization and regeneration concepts for biodiversity and agro-ecosystems should be well defined in the Pragati plan. Soni (2007) has observed the important role of IK in various fields of human life including intercropping techniques, pest control, crop diversity and seed varieties in agriculture; plant varieties, and fish breeding techniques biology; Traditional medicine in human health care; Natural resource management includes soil conservation, irrigation and water conservation; and oral traditions and local languages in education. The realization of IK's contribution in these areas has led to increased interest among academicians and policy makers. Riser (2015) points out that the challenges of sustainability in the twenty-first century around the world have created a change in attitudes. Towards recognizing indigenous knowledge and making it compatible with other forms of knowledge Knowledge. The severe damage caused to the environment has made it necessary to understand and incorporate IK into the global body of knowledge for the benefit of all mankind. The importance of IK in sustainable development is recognized by policy makers.

IKS emphasizes investment in education and health. The purpose of education is not to share information but to develop intellectualism and skill development. Our Vedas say 'Artha Kari sa Vidya' which means that the aim of education is to develop earning skills of human beings for the sustainable development of the society. Our education policy talks about vocational education to create employability of people so that the society can become more harmonious. Ancient Indians considered the body as the first means to live a satisfactory life by performing rituals on the right dates to achieve manhood. Therefore, health was considered an important aspect of life and according to charaka, ayurveda should be studied and practiced by every person in the society. We give more importance to the health and well-being of our mind, body and spirit. Now we are celebrating World Yoga Day on 21st June. When the pandemic affected a large part of the world, we were least affected because of our eating habits, which we inherited from our indigenous tradition. We use various spices in our daily food like basil, neem, turmeric, cumin, black pepper etc. which also work as medicines.

We are including millets in our food habits and promoting yoga and meditation to stay psychologically fit. With a long civilizational history, India has a rich storehouse of knowledge and experience that has developed within the society through various literary works over time. Because of the diversity of people and issues discussed in the mythological stores. The legend of Panchatantra, various stories like Upanishads and various epics like Ramayana and Mahabharata were sources of knowledge about responsibility towards one's family, society and religion which are relevant to all ages in the Indian tradition, these were especially taught to children. That they can internalize these ideas, values and concepts while they are still young, and that they can use this knowledge throughout their lives. In the current scenario. Geeta is a source of knowledge which enriches us with life, skills and knowledge. India, a country rich in cultural diversity, has a long history of indigenous communities that have co-existed with nature for generations. Their traditional knowledge and practices have not only contributed to their survival but also provided invaluable insights into sustainable resource management. Amidst its thriving communities, indigenous people stand as custodians of ancient knowledge and sustainable resource management practices.

India is home to more than 700 indigenous communities, which represent about 8% of the country's total population. These communities have deep knowledge and practices that have been passed down for generations. Indigenous communities in India contribute significantly to the cultural and ecological diversity of the country. Indigenous peoples have developed resource management practices that are sustainable and ecologically sound. They understand the complex relationships between ecosystems and practice responsible resource use. Indigenous knowledge is deeply linked with respect for nature. Indigenous communities such as tribals in India have developed a deep understanding of their local ecosystems over centuries. They have knowledge about medicinal plants, sustainable farming techniques and resource management that is often overlooked. India's indigenous communities have a deep connection with forests. They often live in or near forests and have a deep understanding of forest ecology. More than 95% of community protected areas in India are managed by indigenous communities. Indigenous knowledge includes the conservation of traditional seeds, plants and medicinal herbs. Their practices protect biodiversity by preserving native plant species. Indigenous communities often act as repositories of traditional plant knowledge. Sacred groves, often protected by indigenous communities, serve as refuge for many endangered species. Indigenous agricultural practices are often organic, relying on local resources and minimal outside input. These practices promote soil health and sustainable food production. Indigenous farming practices emphasize crop diversity, crop rotation and the use of organic materials. These technologies are eco-friendly, increase soil fertility and increase resilience to climate change. Indigenous farming methods contribute to food security while preserving the environment. Indigenous farming methods can lead to higher crop yields and healthier soils. Indigenous communities have developed techniques such as rainwater harvesting and aquifer management for efficient water management.

These practices ensure availability of water even in dry areas. Indigenous water management systems can enhance water security. Traditional water management methods in India are thousands of years old. Indigenous communities have a deep understanding of local weather patterns and natural disasters. They have traditional knowledge that can help mitigate the effects of climate-related events. Indigenous knowledge can save lives during natural disasters. Native people of India are often the custodians of traditional medicinal knowledge. Ayurveda, Siddha and other traditional medical systems rely on indigenous knowledge. Indigenous medicinal systems have made significant contributions to modern medicine. There are more than 7,000 plant species used in traditional medicine in India. Many indigenous communities maintain sacred groves, which are small, undisturbed forest areas. These groves are home to rare and endangered species and serve as biodiversity hotspots. There are over 100,000 sacred groves in India, each with unique flora and fauna. Indigenous communities often engage in traditional crafts and occupations that are in harmony with nature. These include handloom weaving, pottery and handicrafts. Traditional crafts support local economies and provide sustainable livelihoods. Despite their invaluable contributions, indigenous communities in India face many challenges including land dispossession, discrimination and loss of traditional knowledge due to modernization. Many indigenous communities in India are vulnerable to marginalization.

However, there is increasing recognition of their importance in conservation and sustainability. India's Forest Rights Act (2006) and Biological Diversity Act (2002) recognize the rights of indigenous communities over their traditional areas and knowledge. Legal recognition is a step towards protecting

indigenous rights and knowledge. It is imperative that we embrace indigenous knowledge in our pursuit of sustainability. Collaboration between indigenous communities, policy makers and researchers is essential to ensure the preservation and promotion of traditional practices. India is attempting to incorporate indigenous knowledge into policies and conservation programs.

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## Conclusion

Ancient knowledge is knowledge acquired over many generations and preserved through formal and informal means. Sadly, ancient Indian knowledge remains confined to millions of palm-leaf manuscripts scattered across the country and gathering dust. While many scholars are engaged in the process of bringing out the knowledge hidden in these manuscripts by researching and republishing such works, this does not match the scale required to make a meaningful impact. On the other hand, oral tradition. In some, rural areas are at risk of extinction due to lack of conservation. This will allow them to analyze the knowledge gained in the contemporary context and identify new opportunities to assimilate the acquired knowledge and synthesize new knowledge. Therefore, keeping the present generation in the dark about the contributions of the ancestors is an inefficient and misleading quote. Options for society. Ancient knowledge plays many roles in society. Only ancient knowledge provides identity to the society. Fellow members of society.

There is continuity in social practices and norms because most of them are transmitted from one generation to another. Relationship through practices and supporting knowledge. Culture has many dimensions. In the direct sense, it is an expression of human intellectual achievement, perceived collectively by society over time. Knowledge and innovation continue. If the underlying knowledge system were suddenly taken away from society, the culture would be shocked. The creation of new knowledge in any society is path-dependent. When the benefit of prior knowledge and thought process is lost. Society, this will lead to re-inventing the wheel, harnessing innovation and new knowledge creation. In this competition, ancient knowledge plays a valuable role in the acquired knowledge and provides a start to the society to move forward on the highway of innovation and new knowledge creation. Compelling arguments in support of ancient knowledge systems have a great potential from an economic value perspective, with the emerging world order placing greater emphasis on the knowledge society. Popular military power will pave the way for knowledge. The power and concepts that demonstrate the superiority of the knowledge tradition are bound to lead the rest of the world. Transforming knowledge into economic value has become fully formalized with global intellectual property rights regulation and patent law. Therefore, the ancient knowledge system will be beneficial for a country like India and promote sustainable development of the nation. Indigenous knowledge is an invaluable asset in India's journey towards sustainable resource management.

It provides practical solutions for biodiversity conservation, climate adaptation and responsible resource use. By acknowledging and respecting the knowledge of indigenous communities, we can create a more sustainable and harmonious future for both our environment and society. This is a path that India and the world should take as we work towards a more sustainable and equitable future. The challenge of meeting human development needs while protecting the Earth's life support systems faces scientists, technologists, policy makers and communities from local to global levels. Many believe that science and technology (S&T) should play a more central role in sustainable development, yet there is little systematic research on how to create institutions that effectively use S&T for sustainability.

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