

Ethno-Medicinal Practices and Sustainable Development: Sensitive Issues of Economic Transformation in Chhattisgarh

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“An Act to provide for conservation of Biological Diversity, sustainable use of its components and fair and equitable sharing of benefits arising out of the use of biological resources, knowledge and for matter connected therewith or incidental thereto.”

The Preamble

Biological Diversity Act (India), 2002

Human survival on any part of the earth depends upon conservation of biodiversity resources. All types of biodiversity are over exploited. Deforestation is growing worldwide due to the over-consumptive lifestyle of people. According to Global Forest Resources Assessment 2000, the net annual deforestation at the global level is one million hectare. This high rate of deforestation poses a serious threat to human survival. The key to sustainable development in any forested regions of world lies in:

- empowering indigenous communities to coexist with biological diversity
- protecting biological wealth
- preventing the erosion of people’s knowledge system related to biological protection and conservation
- ensuring sustainable use of eco-health
- promotion of a wider application of community knowledge, practices and innovation related to biodiversity with their approval and participation
- ensuring equitable sharing of benefits arising from the utilization of indigenous knowledge systems, innovation and practices

These basic concepts of sustainable development have been approved by the International Convention of Biological Diversity.

Chhattisgarh, a nascent state of India, was born on November 1, 2001. It lies in the eastern part of India between 17°46' N and 24.06' N latitude and 80.15' E and 84°51' E longitude. Chhattisgarh is treated as a land of opportunities and an herbal State of India. The region possesses not only rich physical heritage but also includes the world-famous tribal belt of Bastar. Every third citizen of this State is a tribal member—tribal people constitute 32.46% of total population of Chhattisgarh. The State accommodates 42 tribal communities, including five primitive tribes. These tribal communities preserve a vast amount of indigenous knowledge that has yet to be appropriately explored and documented. Forests cover better than 44% of the State’s geographic area, for a total of 56,448 sq. kms. Dense forest constitutes 67.10% of the total forest area, while 32.89% is considered open forest. The forest region of

the State comes under Decan biogeographical zone with its unique and rich biological resources and various rare medicinal herbs. The rainfall of this region depends on the southwest monsoon and averages between 1,200 mm and 1,600 mm.

The indigenous communities of the State use as many as 327 medicinal herbal species grown in the forest without any systematic environmental planning. The wide-scale industrialization, mining, illegal felling of trees, over-exploitation of the biodiversity resources base, coupled with inappropriate conservation and brutal exploitation by pharmaceutical companies have led to 42 herbal plants being considered endangered species. However, tribal herbalists believe that more than 75% of the rare herbs have been wiped out.

Scenario of the World Market: Demands on Natural Medicine

Today, the Western system of health care and treatment has become very expensive. Global consumers and the medical fraternity have recognized the limitations of the allopathic system of treatment, and herbal medicine is no longer treated as an alternate system. According to estimates by the World Health Organization (WHO), more than 80% of people worldwide depend upon traditional medicine. The demand for herbal medicine is growing daily, and the revitalized herbal industry has become a big business in today's global marketplace. The future of this industry is promising and bright. China and India are two nations controlling the supply of herbal medicine in the global market. Herbalists in India use more than 7,000 plant species—of these, 315 are rare medicinal species. In China, as many as 5,000 herbal plant species are used in the national medicinal system. During the last decade, the export of herbal medicine from India doubled, while the Chinese export of herbal medicine has doubled during the *last five years*. India exports crude, herbal drugs to developing countries after catering to the demands of the local market. Countries like Japan, Germany, France, Switzerland, the United States, and the United Kingdom purchase 75–80% of the crude herbal drugs sold by India. Herbs like aconite, aloe, belladonna, acorus, cinchona, cassia tora, dios corea, digitalis, ephedra, plantago (isabgol), cassia (senna), and chlorophytum-arundiaceum have a high market demand in these countries. In fact, the demand for these herbs in the U.S. market is expected to reach US\$20 billion in the near future if rules are liberalized. The export of herbal medicine from India varies between INR 25,000 millions to INR 30,000 millions. The annual growth rate of this export is estimated as varying from 15–20%.

The herbs have been used as natural medicine among tribes of India since time immemorial, and the growing global demand has both legitimated this as an industry and stimulated exploration of the indigenous knowledge system that had been largely neglected, undocumented, and unprotected. In addition, these forces have led to a shifting of natural medicine and natural pharmaceuticals from the fringes of society to the mainstream of development. Natural medicine is the oldest and purest system of medicine known to humanity. The medical experts of many developed countries have acknowledged and approved the efficacy of natural medicine. This affordable system offers cures for cardiovascular diseases, blood pressure, cancer, arthritis, stones in urinary system, bone fractures, and other complicated ailments for which the Western system has only very expensive solutions.

Indian Situation: Opportunities for Natural Medicines

No doubt, the global demand on natural medicine has stimulated and expanded the

unorganized Indian herb sector. The domestic market of India accommodates a large number of small companies dealing with production of herbal medicine. However, these small players are exposed to threats from organized players who motivate and sensitize global consumers through sophisticated advertising. The Indian market for natural medicines is controlled by fewer than a dozen big companies who handle more than 85% of the total business. The Government of India has recognized the significance of the indigenous knowledge system relating to the conservation of biological diversity and sustainable development, and has enacted various programs and proposals on its behalf. The Government of India is one of the participating countries to honor the resolution of International Convention of Biological Diversity, 1993 and has enacted the appropriate programs to achieve the drafted objectives. The new scheme of Swarna Trikon (Golden Triangle) introduced by the Indian Government aims at bringing synergy between traditional natural system of health care and the modern system, i.e., between informal and formal systems of knowledge. The rationale for this blending approach is termed "Active Ayurveda." The apex national Institutes like the Indian Council of Medicinal Research (ICMR), the Council of Scientific and Industrial Research (CSIR), and the Department of Indian System of Medicine (ISM) have joined together and pooled their resources to develop new herbal drugs through intensive research and development activities. This intervention aims at promoting collaboration among traditional herbalists, Ayurvedic physicians, shamans, and modern medical practitioners. It focuses on the administration of ancient techniques under scientific management for manufacturing sophisticated herbal drugs with high medicinal potencies. This intervention has a far-reaching effect in translating the objectives of the International Convention of Biological Diversity. Article 8(j) of the International Convention of Biological Diversity emphasizes that "*Knowledge innovations and practices of local or indigenous communities of individuals can not be used without their involvement and approval, ensuring in the process, equitable sharing of benefits.*"

Other Indian research institutes have yielded wonderful results from herb-based research carried out in the last few years. Scientists from the Defence Research and Development Organisation (DRDO) of India have experimented on the medicinal potencies of fifteen herbs such as Aswagandha, Bramhi, and others, and have developed a herbal stress reliever for soldiers deployed in a hostile environment. This herbal stress buster is called Composite Indian Herbal Preparation (CIHP-I). It has been tested and found effective in improving the physical and mental efficiency of soldiers, especially those deployed in high altitudes and cold areas, where they are exposed to intense stress and high altitude sickness.

The importance of the herbal industry has been recognized by the different financial institutes of India. Both the National Bank for Agriculture and Rural Development (NABARD) and the Export-Import Bank of India (EIBI) have floated different schemes and programs stimulating the export of herbal drugs from India. NABARD gives priority to financing research and development on natural medicine, including preparation of packages of practices, technology for value addition to herbs and medicinal plants, promotion of organic farming initiatives, research on developing strategies for eliminating trade barriers imposed on the export of natural medicine, etc. The scope and opportunities available for promotion of the herbal industry in the context of sustainable development and conservation of biodiversity are unlimited and bright.

Research Design

The present paper is based on an anthropological study of the indigenous knowledge system of ethnomedicinal practices prevalent among Halba and Raj Gond tribal communities living in twelve forest-based mountain villages of Antagarh Block in the Kaker district, Bastar region of Chhattisgarh. A team of two social anthropologists and one ethnobotanist camped in these villages for nine weeks during November-December 2002. The study focused on in-depth interviews with twenty-one tribal herbalists (Baiga), eighteen shamans (Gayata), and thirty-five community elites spread throughout the twelve villages. Village-based resource maps showing the habitat of the herbal species were developed with the administration of tools of Participatory Rural Approach (PRA). The field investigation was carried out with administration non-participant observation, interview guides, focus groups, discussions, in-depth personal interviews, and anthropological case studies. Some tribal herbalists were engaged as field guides to accompany the team for identifying the habitat of herbs in the forest.

The tribal herbalists shared information on various herbal species, their habitat, life cycles, and ethics relating to sustaining genetic diversity for future generation. The needs, problems, and aspirations of the herbalists and shamans were critically assessed. All of them are farmers and some of them have abandoned this profession. The research questions posed were:

- How people's scientific understanding and perception would be enhanced.
- How erosion of people's indigenous knowledge system would be checked.
- How appropriate value would be attached to existing indigenous knowledge system.
- How local communities will be helped to coexist with biodiversity.
- How herbalist-to-herbalist learning will be promoted.
- How creative local innovators be recognized and how this informal knowledge system would be renewed and revitalized.
- How sustainable development would be achieved with community participation and conserving the biological diversities.
- How equitable sharing of benefits arising from utilization of knowledge, innovations, and practices would be ensured.
- How a people's biodiversity corps would be formed.
- How community biodiversity registers would be developed.

This paper highlights the vision of tribal herbalists and shamans towards renewing the indigenous knowledge system and achieving sustainable development in each of the tribal villages of this nascent State. The study critically examines the sociocultural dimensions revolving around traditional tribal lifestyles relevant to conservation and the sustainable use of biological diversity. It is an attempt to examine the scope of involving the academy in transforming the world of herbalists and shamans to a greater protection of biological diversity and attaining the sustainable development.

The study is a pilot study and subject to limitations. It fails to cover the botanical classification of all plants used by the herbalists. The cross checking and validation of information on the plants and their taxonomic identity was made through consultations with Prof. Pandit Ravi Shankar, School of Life Science, Skukla University, Raipur, Chhattisgarh.

Ethno-Medicinal Practices Among the Gond and Halbas of Chhattisgarh

The traditional herbalists among the Gond and Halbas of Chhattisgarh administer the roots, rhizomes, bark, leaves, flowers, fruits, latex, and seeds of at least forty-four medicinal plants that grow in the forest regions of their territories. The medicinal components of these plants have been recognized and validated through a trial-and-error process, and then incorporated into an ethno-healing system based on the traditional wisdom of the tribes accumulated over generations. The knowledge and use of these herbs are transferred by peers from one generation to another. The herbalists insist on utmost secrecy about the plants, their habitat, and knowledge about their life cycle; otherwise, they believe, the medicinal value of the herbs will fade away. The traditional herbalists of the Halba community strictly observe the astrological rules in collection of herbs from forests. Tuesdays and Saturday are considered to be auspicious days for collection of herbs. The influence of the stars is given serious consideration for collection of specific herbal plant varieties. The astrological indicators specifying the times appropriate for the collection of specific plants have been interwoven in ethno-healing system of these tribes.

Globalization and Development Alternatives: Issues and Challenges

The sustainable development and economic transformation in the nascent state of Chhattisgarh, where one-third of the population are tribals, lies in the promotion of pastoral enterprise; the exploitation of the area's rich cultural heritage through spiritual, health and eco-tourism interventions; promotion of tribal arts and crafts; intensification of medicinal plant farming; and the protection of biodiversities and the appropriate exploitation of mineral and natural resources through indigenous entrepreneurship and resource-management initiatives.

The forces of globalization have encouraged many multinational companies to initiate mining operations and to set up new industries in the tribal territories of Chhattisgarh in the past two years. This has led to over-exploitation of biodiversity resources. While the establishment of new industries and the expansion of mining operations have created more job opportunities for local people, they have damaged the basic health of the ecosystem. The existing natural ecosystem has enough potential resources to meet the demands and needs of local communities as well as market, but is unable to cater to the current and future needs of a market economy influenced by the big players in the international market. These corporations have not only influenced the government to exploit the biodiversity resources for their own benefits, but also have pushed their own products at the cost of biological wealth. It is evident that the government very often fails to support local initiatives for organic farming under pressure of these big players. The multinational companies manufacturing chemical fertilizers and pesticides influence the government to create big market for these products. The push to sell these products in local markets has eroded the concept of organic farming, setting aside the policy support for biodiversity conservation. The threat to human survival cannot be eliminated without conserving the biodiversity, and biodiversity cannot be conserved with the present model of development, devoid of appropriate policy support and the government's commitment for conserving biological wealth.

The forces of globalization have stimulated the plundering of the valuable medicinal wealth of Chhattisgarh. The poachers and middlemen engaged by pharmaceutical companies

exploit the medicinal resources by unsystematically engaging the villagers to help collect the raw material. Often the untrained villagers collect herbal extracts even before the species are matured. These middlemen and traders smuggle out the rare herbal species to Bombay-based herbal exporters for export through foreign companies. It is even reported that the patent of some of the herbal species is owned by foreign companies, although due to stringent rules, many herbal products do not always get a proper place in the market of some Western countries. These products are marketed under the tag of “Nutritional Supplements.” In the absence of initiatives to monitor piracy activities, coupled with poor efforts to identify and document local innovation and an appropriate policy support, the Intellectual Property Rights (IPR) of tribal herbalists is not well protected. Very little scope is available to accommodate grass root initiatives and innovation in the present development spectrum. Grass root innovators are denied any support to scale up their products and services through commercial and non-commercial channels. The aspirations of local communities in sharing and disseminating their indigenous knowledge in their own language is not appropriately fulfilled, nor are the local communities appropriately sensitized about the issues of intellectual property rights on natural medicine and local innovations. Additionally, herbalists are reluctant to share knowledge information on their traditional practices and innovations.

Participation of Indigenous Communities in Sustainable Development: Grass Root Visions and Experiments

The indigenous knowledge system, local innovations and practices of tribal herbalists hold the key to sustainable development and the transformation of Chhattisgarh into an herbal State of India. This rich storehouse is still unexplored and undocumented. The innovators lack knowledge on the exchange value of their knowledge and practices, for which lack they are brutally exploited in different fronts.

The ethno-healing practices, innovations, and relevant traditional tribal lifestyles among the people of Chhattisgarh contain valuable productive indigenous resources that have not been appropriately explored. The tribal people of this State lack the ability to develop and apply the entrepreneurial and business skills required for the economic exploitation of the physical and human resources available within indigenous territories of the State. Lack of appropriate local enthusiasm to explore available opportunities towards the integration of community assets within regional, political, social, and economic structures have restricted local development initiatives in transforming local enterprises into a desired economic development scenario.

Some attempt has been made to create public demand for the purchase of pure medicinal and aromatic plants, as well as for the services of folk healers of the State. However, the success story of the Madhya Pradesh State Minor Forest Produce Federation (MPSMFPP) has yet to be duplicated for marketing of herbs and aromatic plants. The intent is that these herbs are to be collected by local Primary Forest Produce Cooperative Committees (PFPCCs). The cooperation of local shamans and folk herbalists is urged, and they are to be paid consultancy and service fees. The counseling services of traditional healers have vast opportunities for commercialization that should be coordinated, and are to be provided to the public through organized effort and the opening of Traditional Medicine Clinics (TMC) in Gram Panchayat Level.

The herbalists, shamans, and folk healers living in the dense forest of Chhattisgarh have long cherished a dream of expanding their services through the spread of Traditional Medicine Clinics. Through such clinics, periodic ethnomedical and apprentice training programs, seminars, workshops, health camps, etc., are urged to be organized by Gram Panchayat in collaboration with local NGOs and the health personnel of local PHCs. The training curriculum is to be appropriately developed in workshops participated in by folk healers, shamans, herbalists, doctors, and health personnel of the local PHC. Financial assistance for such a training program would have to be met by the State Government, and the State administration is urged to follow the provisions of Biological Diversity Act, 2002. It is urged that a team of aspirant youths and adolescent novices with enthusiasm should be selected from the community to work as apprentices and to learn the traditional knowledge offered by shamans and folk healers relating to:

- belief system
- methods of diagnosis
- traditional concepts of illness
- identification of medicinal plants in the forest
- use of different portions of the herbal species
- therapeutic procedures for preparation and administration of medicine
- observance of rites
- magico-religious practices involving songs, colorful dance, use of incense and invoking spiritual forces for healing, etc.

Such participatory intervention involving shamans and herbalists in transferring their knowledge and clinical skill to adolescent novices and apprentices from the community through Traditional Medicine Clinics (TMC) and apprenticeship programs would go a long way towards the revival of tribal culture, in addition to promoting their self-esteem by upholding their healthy and dignified interaction with outside world. The shamans and folk healers are urged to be involved in developing a local tribal language handbook on local medicinal plants and their use, ethno-medical practices and relevant rituals, and magico-religious practices.

There is a pressing need to provide space and opportunities to the folk healers, herbalists, and shamans—the inheritors and custodians of the great indigenous health traditions of indigenous territories—to operate clinic and counseling services that would not only be facilitated with regular medical practices but also would provide healers with the opportunity to upgrade their clinical skills in ethno-healing practices. It would further promote using the mainstream for sustaining, reviving, and preserving rites and rituals revolving around an ethno-healing system. Along with the transfer of indigenous knowledge on the ethnomedical system to other members of the community, the upholding of intellectual and cultural property rights will be ensured.

The management responsibilities of the program shall be entrusted to Gram Panchayat, CBOs, and the community as a whole, in which shamans, herbalists, and folk healers shall be involved appropriately. The program would be rendered cost-effective, self-sustainable, and participatory. The utilization of the services of local folk healers and the use of local herbs is expected to minimize the dependency syndromes of the tribe on outside economical forces. The transferring of traditional knowledge on ethno-healing by practicing folk healers and

shamans would be based on the traditions of indigenous health culture, focusing on the transfer of knowledge from one generation to another within the same community. The therapeutic procedures of the ethnomedical system are completely adapted to the social structure and sub-structures of the indigenous belief and experience system, which must be upheld along with integrating the values, ethics, and intellectual property rights while developing an action plan for the program and blending it with the modern medical system.

It is recognized that the transfer of traditional knowledge of ethno-healing practices through the proposed apprentice program may be handicapped and restricted by taboos and ethics revolving around the indigenous ethnomedical system. The ethics and values governing the relationship between resources and their ownership and distinction emphasize the importance of family, kinship clan, and the network that exists within the social structure. The culture of the ethno-healing system emphasizes upon secrecy of places, materials, and language, which are the property of the family and kinship. Outsiders within the same community are not allowed access to ownership over these resources and knowledge. The transfer of indigenous knowledge relating the ethno-healing practices is normally expressed through kinship relationships. For any viable alternative, arrangements must be made with the approval and involvement of the holders of such knowledge so that shamans and folk healers will be appropriately sensitized to the transfer of their knowledge to apprentices from their own community who, although they are not related to them by kinship network, are “related” by neighborhood.

In the absence of any appropriate initiative at the Government level to validate and add value to local innovations through field as well as laboratory-based experiments, the herbalists apprehend that sustainable technologies friendly to nature and indigenous communities can not be evolved. The contributions of herbalists and shamans are not recognized appropriately in the spectrum of science and academy.

The scope, opportunities, and resources offered by the ethnomedical system have not been appropriately explored. The cultivation of aromatic and medicinal herbs has rich scope for providing economic freedom to poor farmers. Lack of linkage with technical institutes and marketing agencies, poor awareness of marketing potentialities, lack of technical know-how, and the absence of risk-taking behaviors among farmers have restricted them knocking at the door of pioneering experimentation. Such innovative farming has encapsulated the roots and ingredients of conservation of biodiversity and sustainable development at the micro-level. The success stories of farmers engaged in cultivation of aromatic and medicinal plants in other States of India can be borrowed and duplicated through participatory initiatives by NGOs and stakeholders. For example, a model farm popularly known as “Kaipully House” has been promoted on an area of four hectares covering the cultivation of aromatic and medicinal plants by Mr. Sasi Kumar, a 32-year-old hotel management professional in Nattinchira Village of Chelakode in Trissur district, Kerala. This farm is used as a demonstration farm by students of agriculture and horticulture from Kerala Agriculture University. The aromatic and medicinal plants have been ideally grown in this farm in a multi-tier cropping system. Medicinal plants like Safed Musali, Bacopa, Stevia, and Black Turmeric (*Curcuma caesia*) have been cultivated, along with other species of aromatic plants.

The farming of medicinal plants would not only boost local entrepreneurial and business skills of tribal peasants in a demonstrable fashion but it also would promote income-generating activities among unemployed youth and help to alleviate rural poverty in tribal

territories of the state. The success stories of some educated youth of Kanker region of Bastar district of the State in cultivating medicinal plants like Safed Moosali, Lemon Grass, and CN-5 may be duplicated on the Common Productive Resources (CPR) of forest regions of different districts within the indigenous territory of the State. The inappropriate care and exploitation of Common Productive Resources (CPR) within indigenous territories have only multiplied the syndromes of poverty and unemployment in tribal regions of this State. In this globalizing era, more and more multinational companies are coming forward to promote the marketing of rare herbal and aromatic plants. Their exploitive access to these rich resources tells adversely not only upon the protection of rich biodiversity resources but also on the protection of the intellectual property rights of shamans, herbalists, and indigenous innovators.

Food security, ownership, and access to forest resources among indigenous communities are major survival issues that need to be prioritized and addressed through appropriate participatory interventions by NGOs, communities, and the Government. The NGOs have yet to be encouraged with appropriate sensitization and firm commitment towards shouldering the responsibilities of integrating ethno-healing with the modern medical system, bridging the gap between these two therapeutic systems, facilitating practices of folk healers, understanding and protecting their intellectual property rights, mapping the land and common productive resources of tribes, helping them to solve their land right issues, encouraging them to protect forest and biodiversity resources and generate income through exploitation of non-timber forest produce, and intensify the farming of medicinal plants. Well-coordinated interventions in these areas will boost economic transformation in this nascent State; however, the process will take long time and much preparation. The question of who owns the rights to resources poses a serious threat to the development process in indigenous territories. The conflicts over land and resources primarily are due to contradictions between Government perception and rules concerning property rights and tribal beliefs and practices concerning resource management.

Community Biodiversity Registry

Undergraduate and post-graduate students in the anthropology, social work, rural development, botany, agriculture, tribal studies, folklore and folklife, and other relevant disciplines have a role to play in sensitizing the community about Traditional Resource Rights (TRR) and in documenting Community Biodiversity Registry (CBR), if it is done with appropriate community participation.

Students are required to receive an appropriate orientation as a part of the course curriculum regarding development of tools and systems for educating the community on how to keep records of various herbal species in their locality, how they should create and maintain an inventory of local biodiversity resources with a strong sense of ownership, and how to educate them regarding their rights and responsibilities. This will empower the local communities to conserve biological wealth in conformity with provisions of International Convention of Biological Diversity.

Research on Old Manuscripts and Literatures

Students and research scholars also have a potential role in initiating participatory research on old documents recorded in local languages. There is pressing need to translate these records

into English so that traditional concepts, culture, and traditions can be brought into the limelight.

Exploration Mission on Traditional Culture

Scholars and international students also have a wide scope in identifying potential NGOs and communities with whom they can plan a journey of exploration across the tribal regions of some Indian States. During this journey, they would avail themselves of the opportunity to locate various habitats of herbs and animals, to interact with innovators, and to investigate “hot spots” of unexplored biological wealth. They would be exposed to the scope of sharing with villagers issues of biodiversity conservation and intellectual property rights. The documentation of experience on this exploration journey would be a valuable asset. Scholars have a potential role in documenting each expression of the oral tradition and storing them electronically for the future. This inventory would prevent erosion of the oral intangible culture and document a dying cultural heritage of the world. Renewal, revival, and reinstating respect for folk traditions pose a series of challenges for all of us in this new era of globalization.

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