



TECHNOLOGY AND PHILOSOPHY: AN APPRAISAL WITH SPECIAL REFERENCE TO JHARKHAND, INDIA

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Abstract

The present study explores the relationship between technology and philosophy of the adivasi and indigenous people of Jharkhand, as well as their ideological and social responsibilities towards agricultural production and nature. Discussion and study of various dimensions of technological involvement used in making these lands arable for the purpose of cultivating of those rugged and undulating plateau areas of Chotanagpur 'Jharkhand' demands much attention to do this work. Valid and reliable secondary data has been used to understand living the native peoples of this land, which goes back up to the pre-Vedic times. Hence ensuring their sustainability in nature, they developed their philosophical worldview by coordinating multiple economic activities and integrated social responsibilities. In terms of technology and philosophy, the present study will focus on the ways of life of the native peoples of this land.

Keywords: Philosophy, Technology, Tribal¹, Culture, Tribal Economy, Jharkhand

Introduction

In those days of pre-colonial to colonial period, the distributions of the native people of this land was very less in comparison to the present situation. Then, Chotanagpur was the abode of different tribal communities, which is even today known as the same. The distributions of tribal population were scattered throughout Chotanagpur, but they were mainly concentrated to the southern parts of Palamau and central portions of Ranchi. Earlier, they used to live in hamlets in forest-clad land, later which came to be developed as a traditional village. These were happen due to the increase of population of those hamlets along with successful economic activities to ensure

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¹ The term 'tribal' and 'adivasi' are interchangeably used in this article to represent the native people of Jharkhand. The native peoples of Jharkhand have been denoted by scheduled tribe (SC) in the constitution of India.

their sustainability towards nature, and finally they institutionalised their society, norms, customary law, societal and cultural activities. All of these were the complementary dimensions to ensure tribal economy, which were the main pillars of their society. The institutionalised society of the traditional villages developed intimate social responsibilities in the way of sustainability towards nature (Kumar, 2022).

In those days, the tribal economy was based on subsistent oriented economy, which was partially based on forest products and partially based on agricultural productions (Mohanty, 2006; Vidyarthi & Rai, 1976; बिरोत्तम, 2017). As their traditional hamlets (or settlements) were converting into villages, the entire village communities began to involve making land arable and tilling those rugged and undulating plateau areas of Chotanagpur for agricultural purposes. Those areas were mostly located on the slopes of the hills, riverine, valley and hill-sides, where there they used to live. Furthermore, in the processes of making land arable, tilling, hunting and gathering foods, they used to involve handy tools and techniques. In the ways of developing hamlets to settlements or villages during those challenging situations, they had been progressing their thought 'ways of living' along with gradual developing in their tools and equipment to be survived. These all could be recognized today as their technological and philosophical development in the way of sustainability towards nature.

Dealing with the problems of sustainability towards the nature in their traditional settlements, the adivasi and indigenous peoples of this land adopted different modes of earning livelihoods, known today as subsistence oriented tribal economy, that can be categorized as foraging (gathering edible wild plants), hunting (pursuing and killing of wild animals, including catching fish and others), pastoral cattle grazing along with the involvement of different types of cultivation e.g. burn and slash cultivation, swidden cultivation and terrain cultivation and settled agriculture (Vidyarthi & Rai, 1976; Sahay, 1992). As per the conserved archeological remains in the provincial museum of Patna, which have been found in different parts of Chota Nagpur 'Jharkhand' proves its rich "chalcolithic culture"; and "the Asur belongs to the chalcolithic men" (Gautam, 2017), who traditionally and technologically did metallurgy (Sahay, 1992; Vidyarthi & Rai, 1976; बिरोत्तम, 2017). The dimension and discussion of technological involvements in tilling and making land arable of those rugged and undulating plateau areas of Chotanagpur 'Jharkhand' is the hallmarks of their technological and philosophical development as their sustainability.

In the context of native technology, K N Sahay (1992) cited Viveló "Tools and techniques for the extraction, conversion, and utilization of resources; i.e., the methods of extracting resources from the habitat and of producing and distributing goods and services....; and In this sense, technology is inseparable from a society's organization of labour i.e., the way people organize themselves for purposes of work" (Sahay, 1992, p. 99). Baithnath Saraswati (1992) defines it as "Technology is a determining factor in man's innate ability and progress, and thus man is placed at the periphery of his own creation." (Saraswati, 1992, p. 10). The interpretation of technological involvement of adivasi and indigenous peoples demands the holistic approaches of advanced research how they organised and developed agriculture and non-agriculture involvement, which did consolidated their totemic based family; how their hamlets developed into traditional settlements or villages, which amalgamated their societal and cultural institution and consolidated traditional customary norms and regulations in the ways of sustainability towards nature 'ecology'. These all things were initiated into community based ownership and co-operation delineates their traditional knowledge systems as their ways of living. As per the study by Barry Hallen (1995) on adivasi philosophy disclosed it as "philosophy of peoples rather than of individual" (Hallen, 1995, p. 383).

The processes of changing patterns of adivasi culture, technology and philosophy of Jharkhand, possesses glorious past, which is continuously going on up to the present time. In due course of time, outsiders intruded into their traditional settlements or villages. They imposed outlandish rules and regulations over them to collect revenues and to make profit from the tribal economy by exploitation them. After independence, these process are going on up to the present time due to modernization, deforestation, and establishing mining industry along with partially introducing different development programmes in scheduled areas of Jharkhand (Kumar, 2022). A study by Stuart Corbridge (1988) on ‘The Ideology of Tribal Economy and Society’ disclosed that “The ideology of tribal economy and society, though accurate perhaps in the early part of this century, and perhaps even today in parts of north-east India, is fast becoming a myth which is at odds with the changing realities of tribal life and development of Jharkhand.” (Corbridge, 1988, pp. 35-36)

Objective

The relevance of the present study on adivasi peoples of Jharkhand, the researchers’ objectives is very specific which are:

1. To study the technology and philosophy of adivasi and indigenous peoples of Jharkhand; and
2. To understand the adivasi culture and society through their philosophy.

Research Methodology

After reviewing and analyzing the available literature on the present study, it is primarily based on primary and secondary sources along with anthropological and historical methods and methodologies.

Limitation of the Study

As per the study on native traditional technology and philosophy, the limitation of present study is primarily based on the adivasi and indigenous people of Jharkhand.

Cultural Patterns of Tribal Society

Cognitive domain of tribal culture of Jharkhand is closely associated with sustainability to nature ‘ecology’. Enfolded into the traditional norms and customary laws, tribal economy has been regulated by societal, cultural and religious norms in the ways of ecological sustainability towards nature. After observing and analyzing the advanced studies of Raymond Firth (1951), Herskovits (1952), Vidyarthi (1963) and other anthropologists’ description on tribal economic system, L P Vidyarthi et al., (1976) explained it as “A comparative insight into the natural and functioning of the economic system or organization of the tribals will present a true picture of their economic life which has a system of mutual dependence and the influence of social force on their economic behavior” (Vidyarthi & Rai, 1976, pp. 95-96). A study by Stephan Viljoen (1936) on ‘*The Economics of Primitive People*’ found that each and every community possess a specific culture and economic activities, which may differ from one community to another, but they are economically more significant than the differences (Viljoen, 1936). A study by Mamata Choudhury (1977) on ‘*Tribes of Ancient India*’ found that the cultural patterns of tribal peoples were influenced by natural surroundings along with the social, religious, political and commercial entrepreneurship (Choudhury, 1977). It is evident from the above reviews that on the one hand the tribal culture is strongly linked with nature for sustainability of economic activities; so on the other hand, the tribal economic system is linked to the social and religious matters among the tribal people of this land.

The characteristic features of traditional tribal settlements 'hamlets to villages' in Chota Nagpur 'Jharkhand' that were ecologically and geographically scattered throughout forest-clad lands, slopes of hills, riverine and nearby valleys were based on complementary subsistence materials culture available nearby their settlements. Technological involvement and the traditional knowledge system of those tribal and indigenous peoples had been generally customized in their daily lives in the simple ways that could be used as per their requirements. As per the finding by M N Srinivas (1993) in the study titled '*Changing Values in India Today*' says "Value varies from one section of the people to another on the basis of region, language, religion, sect, caste, class and ethnicity" (Srinivas, 1993, p. 933). Value, in the sense of earning livelihood, which is closely associated with culture, may be varied among the tribal and indigenous people of this land, but patterns of culture among them possess similarity in spite of the dissimilarity of value as per the observations and analyses in the present study, which unite them as tribal and indigenous people. Native traditional societies of tribal culture were governed and regulated by their traditional norms and customary laws. These all could be traced in their folklore, myth, legend, ideology and philosophy, which have been till today happily cherished in their memories as effective and meaningful incidents of historical resistances and movements; and all of these ways, they achieved present situations.

A study by L P Vidyarthi et al., (1976) on '*The Tribal culture of India*' disclosed that they had developed the philosophy of "Nature-Man-Spirit Complex" in the way of enjoying of their lives (Vidyarthi & Rai, 1976). Social and religious life of the tribal communities of Jharkhand were intrinsically associated with the geographical and ecological settings in 'Nature-Man-Spirit Complex', which revolved around in their daily lives' activities. In this context, they propitiated their elder spirits, bongas, deities and supreme *Singbonga* by offering homage, *bali* (sacrifice), enchanting ballad, folk songs and folklore or practicing some techniques and canalizing. These whole processes were completed before going to do involvement in any economic and social activities e.g. foraging, hunting, finding a place for doing burn and slash agriculture or organizing any social activities. As per the above mentioned reviews and observations, the patterns of culture among the tribal peoples of Jharkhand were mainly based on environmental and ecological sustainability of forest and agriculture is termed today as 'ecological philosophy'. In spite of much dissimilarity among the tribal communities here in terms of various methods of earning livelihood, norms and customary laws, there were a lot of similarities among them on the basis of their social, religious and cultural activities.

Tribal Economy

There are 32 different tribal communities inhabit in Jharkhand mostly concentrated in the central and southern regions of it of nine tribal communities (the Asur, Birhor, Hill Kharia, Birjia, Korwa, Mal Parhaiyas, Sauria Parahia, Parhaiya and Savar) belong to Particularly Vulnerable Tribal Groups (PVTGs); other and ten major tribal communities (Santhal, Oraon, Munda, Ho, Lohara, Kharwar, Kharia, Bhumij, Mahli and Mal Pahria) possess approximately 68-75% population of the total tribal population (Mandal, Mukherjee, & Datta, 2002). Citing Ernest Grosse, Ehrenfels, Herskovits (1952), Majumdar (1966), Dube (1969) and L P Vidyarthi, Rajesh Kumar Choudhary's studies on the Kora tribal community disclosed that there were different types of tribal economy viz. foraging, hunting and different modes of cultivation possessed among them during pre-colonial to colonial and till to the 1960s (Choudhary; Vidyarthi & Rai, 1976).

Analysing the reviews and observations on the tribal economy from the pre-colonial to 1960s, the researchers have suggested the tribal economy of Jharkhand to classify into two most appropriately categories:

Agricultural involvement	Non- Agricultural Involvement
Hill cultivation type	Foraging and Hunting types
Plain cultivation type,	Artisan types,
Shifting or jhum cultivation type	Agricultural labour types
pastoral and cattle- herder type	Wages labour types

A study by K N Sahay (1992) on the “*Technology and Social Network: A Case-Study of some Changing Tribals of Chotanagpur*” disclosed that major tribal communities like the Oraon, Munda, Ho, Kharia, Chero, Kherwar, Gond etc. used to do settled agriculture in the plain areas. These agriculturists tribal communities used to do hunting and fishing in the specific seasons as per their requirements. The Birhor, Korwa, Kora, Savar and Maler etc. used to do foraging and hunting. The Birhor and Maler have been involved in “Foraging and Hunting types” activities and used to do wandering in the forest in quest of games and trapping birds and animals along with raw material for making material cultures. The tribal communities like the Maler, Hill Kharia, Asur, Korwa, Parhaiya, Birjia, Binjhia, Gond, Pahariya and others used to inhabit on the slop of hills where they used to hill cultivation along with practicing of different form of burn and slash types of cultivation and occasionally did foraging and hunting. (Sahay, 1992; Choudhary; Mohanty, 2006; Roy S. C., 1921; Upadhyay; Vidyarthi & Rai, 1976; बिरोत्तम, 2017; Roy S. C., 1912). On the bases from the above reviews it is clear that almost all the tribal communities of Jharkhand used to do involve both the categories e.g. agricultural involvement and non-agricultural involvement as per their requirement as above given suggestions by the researchers.

These all types of tribal economy were mainly based on forest-clad undulating and rugged areas, and arable lands where they used to earn livelihood through subsistence or marginalized economic systems. Local surrounding natural resources provided them raw material to prepare tools and implements required both for the agricultural involvement and non-agricultural involvement which is the hallmark of their technological advancements towards ‘nature’ sustainability, fulfilled by environmental and ecological requirement. Artisan tribal communities e.g. the Lohra, Karmali, Chick Baraik and Asur used to do the work of making tools, weapons, implements and home based required material cultures for other (Sahay, 1992). Tools and techniques in the context of technology were generally used to make handy and adaptively usable in their works among the tribal and indigenous peoples of Jharkhand.

Technology

The presently study is mainly confined to the technological involvement in the life and lives among the tribal and indigenous people of Jharkhand, who kept themselves survived by limited resources to fulfill their domestic needs and economic activities for thousands of years. Committed to the ecological worldview, the tribal communities of this land have relied on friendly and easy to use technological advancements for natural sustainability. That is, they ensured only a limited amount of technological involvement in their traditional tribal economy, which was used either in agricultural or in non-agricultural participation. The required tools and weapons that were made within the tribal communities shows technically and scientifically high level technological knowledge systems in those contemporary circumstances from the period of pre-colonial to 1960s; and somehow they have been maintained till today. The Asur, Lohra, Karmali, Chick Baraik and others traditionally used to make all types of material culture e.g. agricultural tools, hunting weapons, household necessarily appliances in their own traditional *Bhanthi* or air- blower. “*Bhanthi*

that was associated with two wooden round blowing posts. One side of which was covered with loses leather and a woman would stand on these two pots like an apparatus and press each of them with her legs one after the other so that air would blow out of the pipe fixed in between these two posts. Air- blower had a bigger size of blowing pot which was associated with a rope through pulley type mechanism which when pulled; air would blow out of it” (Sahay, 1992). This type of air-blower machine is generally used in the village areas of Bihar and Jharkhand till to the present time mainly by the black smith (or Lohar).

Tribal peoples used thousands years old traditional technology for making fire by rubbing two dry wooden pieces of specific plants with a piece of cotton fixed at the rubbing point. The Asura, Birjia and Lohra were the traditional iron-smelters and black smiths and developed the old traditional working knowledge in the form of suitable and adaptive indigenous technology of iron-smelting. They used “*Bichchia Pathal* (hematite) from the local hill for this work. They used to make a big earthen pot in which this *Bichchia Pathal* was placed and then set fired on them” (Sahay, 1992).

The geographical settings where there tribal communities used to inhabit had been lack of irrigation facility due to undulating and rugged plateau areas along with low fertility soil profile. As per the study by S. P. Sinha (1979) reveals “The soil in all categories of land is deficient in nitrogen, but fairly rich in potash. Since the soils are potassic and the terrain is undulating, rain water quickly lost from the fields with the result that the problem of soil erosion has been baffling in this area.” (Sinha, 1979, p. 60) In those situations, they used to make them structural form of terrain for enriching soil fertility, for conserving water for paddy cultivation, and for yielding better agricultural productions. With the help of all the villagers, they used to make agricultural land construction viz. terrain types of arable lands, traditional embankments ‘dams’ on the hill or hill-side to reserve rain water for irrigation along with multipurpose uses of water. Those construction used to fulfill the supply of water for village sustainability e.g. to wash the utensil and clothe, and others necessarily activities related to house, to have a bath and to take drinking water etc. In some agricultural field, tribal peasants used to make wells, from which they used to pull out water by the help of crossed types mechanism that was made by the two wooden poles. This machine did work like pulley. Agricultural productions (cereals) were measured by the help of traditionally systems, which were usually known as *Paila* (wooden or metal measure) for exchange of grins. Vegetables were sold in heaps of different quantities or making bundle of them. They had old traditional storage systems for paddy, which were made by wooden or earthen pot. They used *Chhatka*, *Mora* and other big size of baskets (Sahay, 1992).

In their traditional tribal settlements, they habitually used old traditional and technological mechanism for making their tools and equipments handy to work easy and simple in their daily lives. They used *Jatangi* or its other tradition forms for making oil out, *Dhenki* for paddy pounding and *Jata* for making flour of wheat rice and pulse. *Jatangi* had two wooden logs to press it. *Dhenki* had a long wooden log of which one side used to press by leg and other side had a *Okhal* type structure where cereals e.g. paddy, grain, wheat and others seeds were put for making them fresh, split into two pieces or other kitchen purpose. *Jata* had two flat and circular types of *Patthal* of which mid they used to make pressure for making flour of different types of cereals.

It is evident from the above reviews and observations, tribal communities possessed rich old traditional and technological knowledge systems, which made them possible to survive in those contemporary situations in the undulating and rugged forest-clad plateau areas of Chotanagpur ‘Jharkhand’. Accessing minor forest and agricultural production along with foraging and hunting in those days had been closely connected with the traditional technology, which were inherited in them

from one generation to another by adding some developments as per their requirements. Water management, agricultural implements, hunting equipment and weapons as well as to manage the various land formations and make them arable by going through the processes of farming the rugged and undulating forest-clad plateau of 'Jharkhand' required a good technological knowledge system, which was the main source among the tribal and indigenous peoples of Jharkhand to sustain themselves in those contemporary conditions.

Philosophy

A study by A. P. Elkin (1969) on Australian aboriginal philosophy said that "Man everywhere and at all times evolves a philosophy of his universe, of the particular universe in which he lives, and moves and has his being." (Elkin, 1969, p. 85). Based on the above statement it could be said that philosophy is nothing complex, but it is ways of living and sustaining themselves where we live by accommodating those things located nearby us as per our requirements is the part of philosophy. In this context, tribal and indigenous peoples of Jharkhand had developed many old and traditional tools and equipment in forms of handy and adaptive in all circumstances as per their requirements are the hallmarks of their technological advancement in those contemporary periods. These all are the part of their ecological and philosophical worldviews that is also found till today in their societal, religious and cultural activities and also their traditional norms and customary laws. They have been sustaining themselves by the help of their traditional economies and settlements or villages and accommodated their limit resources in the forms of old and traditional technologies. But up to the present scenarios, these all things is going to be processed of changing after making some modifications or adaptive another alternative of their forms due to modernization, industrialization, deforestation, migration and emigration etc. along with other problems and prospects.

Conclusion

The present research article is modest attempt to study the technology and philosophy among the tribal peoples of Jharkhand that has been in their ways of living by the help of the old and traditional tools and equipment in their traditional settlements hamlets to villages' sustainability to the nature 'ecology'. The native peoples of this land used them handy as per their technological innovation to the advancement in every aspect of their lives to use them in those early and hard days in accommodating and sustaining themselves. Such occult-technology by and large still continues though they are gradually declining on generation level due to modernization, industrialization, deforestation, migration and emigration etc. along with other problems and prospects.

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