

Indigenous Knowledge and Endogenous Development: Exploring Survival Strategy of a Tribal Community of Jharkhand, India

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ABSTRACT

Indigenous communities depend directly on natural ecosystems for their livelihoods - wild plants and animals for food, for clothing, for fuel, medicine, and shelter. The deteriorating ecological situation, persistent poverty, social, political and religious tensions and the reduction of biological and cultural diversity present a polycrisis for which new answers are urgently needed. It is in this context the relevance of Indigenous knowledge has entered in the mainstream of sustainable development and the concept of endogenous development has received greater attention. Endogenous development refers to development that is mainly, though not exclusively, based on locally available resources, such as land, water, vegetation, knowledge, skills and competencies. The present article is an endeavor to document the customary practices based on indigenous knowledge of a *Sauria-Paharia* community in relation to their livelihood strategies for survival in a hostile condition. The article highlights the localized livelihood organization encompassing pattern of resource identification and use, 'local laws' of resource conservation, labor organization in terms of acquisition of specialized knowledge, continuity of knowledge through customary networks and distribution of knowledge in terms of age and gender. Despite the presence of all the strength required for the endogenous development, the villagers have to combat with the challenges imposed by the

extraneous factors like religious conversion, culturally incompatible education system, intervention of development agencies and programmes and acculturation of the tribal society into the non-tribal framework through greater participation in different fairs and festivals of other ethnic and religious groups. Finally, the article tries to explore the possibilities of endogenous development in the changing scenario by rapprochement of persisting knowledge base of the community and the factors deviating the community from their customary practices that so far been successful in the local context.

Key Words: Indigenous Knowledge, Customary Practices, Endogenous Development, Sauria Paharia.

INTRODUCTION

The International community made an unprecedented pledge to meet the needs of the world's poor and to safeguard them against the threats of the twenty-first century by adopting the Millennium Development Goals (MDGs) in 2000. Leaders of 147 states reaffirmed the principles of poverty reduction, democratic governance, and human rights protection, which have been at the heart of the United Nations system since its creation after the Second World War. Today these principles demand renewed effort as the disparities

between the world's poorest and wealthiest are increasing, and poor people's livelihoods are becoming ever more vulnerable to new socio-economic and environmental challenges. Worldwide, the people who are hit hardest by livelihood insecurity are those on the economic and political margins. Indigenous lifestyles are particularly threatened by the dominance of mainstream society and the steady loss of biological resource diversity. Indigenous populations require particular consideration, because political discrimination, socio-economic inequity and environmental degradation are seriously hampering the cultural and biological elements on which many indigenous livelihood systems are based ^[1]. These multiple dimensions of hardship have received increasing international attention in recent decades, but more needs to be done to protect indigenous communities against the erosion of the cultural and biological richness on which they depend.

Over the last thirty years, national and international development programs and research initiatives have shown unprecedented interest in local knowledge of the environment, variously referred to as 'indigenous', 'local' or 'traditional' ecological knowledge. Before the 1980s, development interventions had a history of downplaying or even ignoring locally based knowledge. As a result, the imposed frameworks and strategies for resource management were often alien to local conditions and ineffective in the long term. Development ideology has often been based on incorrect assumptions, resulting in culturally inappropriate actions ^[1, 3] and top-down planning. The balance required for the sustainable local level use of natural resources and an enhanced quality of life is difficult to find and maintain. The appeal for an 'alternative collective wisdom' ^[1], based on local ecological knowledge has, over the last three decades, become more defined and is now becoming more influential in policy documents, research agendas and participatory methodologies. However,

despite the best intentions behind development policies that attempt to reflect local needs and use local knowledge, there is still dissatisfaction with many of these efforts – expressed by those working in the field, including local and indigenous peoples themselves. There appears to be a significant gap in comprehension between different worldviews. Since indigenous knowledge alone is not an answer for a sustainable development, eco-friendly and socio-culturally viable external ideas are also welcomed by the rural folks in order to complement the existing ones, thus, endogenous development. Endogenous development is development from within, but built around the people's indigenous or traditional knowledge systems and enhance by infusing culturally acceptable and environmentally stable 'outside' ideas to strengthen local livelihood as well. In order to contextualize the above argument, a case study was conducted to document the customary practices based on indigenous knowledge of a Sauria-Paharia community in relation to their livelihood strategies for survival in a remote location. The study highlights the localized livelihood organization encompassing pattern of resource identification and use, 'local laws' of resource conservation, labour organization in terms of acquisition of specialized knowledge, continuity of knowledge through customary networks and distribution of knowledge in terms of age and gender. Despite the presence of all the strength required for the endogenous development, the villagers have to combat with the challenges imposed by the extraneous factors like religious conversion, increased rate of seasonal migration, culturally incompatible education system, intervention of development agencies and programmes and acculturation of the tribal society into the non-tribal framework through greater participation in different fairs and festivals of other ethnic and religious groups as well as internal dynamics of the community. Although this paper is supposed to present a case study on

possibilities and relevance of Indigenous Knowledge for endogenous development in a localized group but it is imperative to briefly review the key concepts of the theme so as to give a sense of direction to readers.

THEORETICAL CONTEXT

From the outset, it seems necessary, for the start of this work, to give content to the four key concepts relevant in the context of this article are Indigenous People, Indigenous Knowledge, Sustainable Development and Endogenous Development. The term indigenous peoples is in itself a contested category of people; so too is indigenous knowledge. The former refers to “culturally distinct ethnic groups with a different identity from the national society, draw existence from local resources and are politically non-dominant”^[4]. The World Bank^[5] adds a development perspective by stating that indigenous peoples are “social groups with a social and cultural identity distinct from the dominant society that makes vulnerability to being disadvantaged by the development process.” The UN has no universally accepted definition but thinks “indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them”^[6]. There are some common grounds from these definitions. Indigenous peoples are people living in an area within a nation-state, prior to the formation of a nation-state, but may identify with it; and have maintained a great part of their distinct linguistic, cultural, social and organizational characteristics.

Indigenous knowledge system (IKS) on its part refers to what indigenous people know and do, and what they have known and done for generations – practices that evolved through trial and error and proved flexible enough to cope with change^[4]. This definition draws our attention to the colonial racist idea that indigenous knowledge is a

monopoly of trials and error while western (modern) knowledge is science characterized by experimentation. Hence, while the former is presumed clogged, concrete, and inaccurate, the latter is painted as intangible, weighty, right, and imbued with universal reasoning. IKS were also developed by experimentations though these experiments were not documented and the knowledge systems were legitimized and fortified under suitable institutional frameworks, culture and practices. They have been passed on to other generations (though discriminatorily) and have enabled indigenous people to survive, manage their natural resources and the ecosystems surrounding them like animals, plants, rivers, seas, natural environment, economic, cultural and political organization. For this study, IKS refers to the set of interactions between the economic, ecological, political, and social, environments within a group or groups with a strong identity, drawing existence from local resources through patterned behaviors that are transmitted from generation to generations to cope with change. These patterns are sustained by micro level institutional arrangements vested with differentiated responsibilities that ensure the group’s continuous survival.

Sustainable development on its part is a fluid concept that is relatively new in the development discourse. It was defined by Brundtland Commission as “development that meets the needs of the present generation without compromising the ability of future generations to meet theirs”^[7]. Such a political definition fails to give concrete sustainability benchmarks. Today, the earth is so polluted that the very survival of humanity is threatened as evidenced by silent emergencies like desertification, fast degradation of arable land due to abusive and inappropriate use of fertilizers, polluted rivers, air and soil caused by industrial effluents^[8]. These are speeding the process of biodiversity loss. The loudest emergency the world has to deal with is global warming but so far coping mechanisms for safeguarding our

common future remain inadequate. Cooperation at all levels by all including indigenous peoples with differing knowledge systems, is needed to protect the earth's life support systems and to meet present development needs whilst keeping in mind those of future generations need these life support systems. Protection of the earth's life support systems requires all sorts of knowledge and coherent information. The so called 'experts' should try to understand the people they intend to help and should take indigenous knowledge and perceptions into consideration rather than denigrate and relegate them to the background in development interventions. A practical definition of sustainable development should contextually take into consideration issues of cooperation, stakeholder participation, commitment, long, medium and short term effects of current actions, common concerns, inter and intra generational equity, justice, and moderate production and consumption habits. All these are embedded in the coping mechanisms of small scale community like Sauria-Paharia. However, they are under threat due to the cruelty of dominant culture and other current development interventions.

Change and development cannot be enforced, they have to come from within the own person – family – community – society, its own culture, religion, values, knowledge, institutions, experiences and place. Endogenous development is the development based mainly, though not exclusively, on locally available resources, local knowledge, culture and leadership, with openness to integrating traditional as well as outside knowledge and practices. In practice, endogenous development distinguishes six different locally available resources that are being used in building sustainable livelihoods and well-being.

- Natural resources (land, ecosystem, water, plants, animals)
- Human resources (knowledge and skills, learning and experimenting)

- Physical resources (human-made things such as roads, canals, irrigation systems)
- Economic resources (markets of goods, food, labour; ownership, reciprocity)
- Social resources (family systems, ethnic organisations, social institutions)
- Cultural or spiritual resources (beliefs, norms, values, festivals, rituals)

The study focused on all the locally available resources of the community and their traditional way of utilization and management for livelihood sustainability as well as challenges to mobilise and combine these different local resources, to achieve the vision of community well-being. The next section describes the methodological context and area on which this case study is focused.

COMMUNITY, CONTEXT AND METHODS

The research was carried out among the Particularly Vulnerable Tribal Group (PVTG) named *Sauria-Paharia (Maler)*, who are considered as the first inhabitants of Santal Parganas, currently residing in north of Rajmahal hills of Jharkhand state, India. They speak *Malto* language and live on hills or hill slopes. The Sauria houses are mostly thatched/tiled huts with two rooms supported on pillars of poles, with a main pillar at the centre. The hutment usually has a thick fencing done with *kabrotulsi (Hyptis suaveolens)* or brush wood of *arhar (Cajanus cajan)* or bamboo splints, from top to bottom. The society is patrilineal in tradition. The division of property is done among the sons only. Living in a difficult terrain, cultivation on *Tanr* (upland), with little or no education, healthcare facilities, drinking water, etc. their economy is much below the lowest minimum required for a decent living. At many places it has been a case of poverty and penury in the land of plenty. Their daily necessities are met either by the weekly markets or by the hawkers (*pheriwalas*). The hawkers are seen mainly during harvest season, when *Saurias* have reaped their crops. Due to the restrictions imposed by state and ever-shrinking forests

and hill resources their livelihood is under stress and survival is at stake. Dominant development models of change operative through the introduction of administrative machinery, democratic experiment and concept of welfare have definitely broken the stagnation of *Sauria-Paharia* community but it also decaying their age-old practices which seems to be more sustainable in such remote locations.

This article is based on data generated from a fieldwork of more than three months on the *Sauria Paharia* community of Jharkhand, India to understand the relevance of Indigenous Knowledge for sustainable development in a localized context. The previous studies^[9] on *Sauria-Paharia* community focus on the outcome and importance of induced development but undermine the inherent process of endogenous development model. In order to find out the role of customary practices in sustaining livelihood as well as to find out the challenges for endogenous development, a case study was carried out in a small village named *Durio* located in the *Karmatanr* Panchayat, *Littipada* Block, Pakur District, Jharkhand, India. The village is situated in a very interior location and inhabited by only 22 households.

The research was carried out in different phases. Initial period of research proved to be difficult because of hilly terrain and suspicious attitude of the respondents that gives the impression of a culture whose members constitute what Adler and Adler^[10] described as reluctant respondents who are not only hard to find but even harder to secure for permission to study. However, employing a 'local boy' as field guide negotiates this predicament. The 'local boy' plays a role of passive translator rather engaging directly in the interview process. Key informant interview, Jungle walk (for specimen collection), Census Schedule, Observation Schedule and Specimen Identification were the key methods, tools and technique for collecting primary data. Moreover, prior to the 'real' field work, few informal meetings and

interviews were carried out with some key people and potential key informants in block and village to explore more on baseline information regarding the study. The data on indigenous practices were collected through open ended interview and guided observation by the field guide. Almost every member of the village incorporating male, female, adult and young were interviewed independently to find the distribution of knowledge in the community. The study was principally guided by qualitative methodology, however data were numerically coded and categorical variable values were presented quantitatively. The findings were validated by focused group discussion and peer group meeting.

INDIGENOUS RESOURCE UTILIZATION: ENSURED LIVELIHOOD SECURITY

The life style and tradition of each indigenous community is unique and is related to the utilization of particular natural resource and particular type of work. Since tribal communities live in close proximity with biodiversity rich landscapes, they have evolved local specific and novel livelihood strategies based on their indigenous knowledge. This knowledge was passed on through generations and it played an important role in the conservation and sustainable use of biodiversity^[11]. As a result, there existed an intricate relationship between their culture and nature. Social and cultural diversity, coupled with the environmental complexity, have generated diverse approaches and technologies in the management and use of different natural resources^[12].

It is pertinent to note that, traditionally villagers, specifically the indigenous groups, managed their affairs and resources on a sustainable basis^[13]. Their village councils ensured strict observance of institutionalized rules and cultural practices for the sustainable use and management of natural resources. Studies have shown that most of the tribal communities are well aware of the value of

conserving biological resources, and had devised effective methods to conserve them^[14]. Indigenous peoples' knowledge, conservation beliefs and values, environmentally adaptive and sensitive land use, resource management practices, and determined defense of territory and natural resources have enabled many of them to inhabit in the natural habitats for centuries without destroying their ecosystems and biodiversity^[15].

The livelihood of Sauriya Pahariya of the studied village is depended basically upon natural resources like plant, land, forest and animal rearing. Mainly they depend on shifting cultivation but a major share of support reaches to them from various forest yields. Indigenous farming is the primary occupation of the community. Shifting (*Qaaldu*), Upland (*Jotbari*) and plough terrace cultivation are the three types of farming practices carried out by the villagers. Among these three, shifting is the primary source of income which provides them most cash.

Productive Use of Land

Since time immemorial, the villagers are practicing shifting cultivation where farmers move from one place to another to maintain the soil fertility. In *malto* language, the practice of shifting cultivation in hill forest is known as *Qaaldu*. The common practice in the village is to cultivate the land continuously for three years but with dual variation in terms of the condition of land. The term *Jara Gangra* used for the first year cultivation in virgin land after slashing and *Kurwa* used for cultivation in forest from second year onwards. In *Jara*, Cowpea (*Kosroi* in *Malto* and *Barabati* in Bengali) is cultivated. From second year onwards, a mixed crop is taken. The mixed crop generally consists of Maize (*Zea mays*), Sorghum (*Sorghum vulgare*), Pearl millet (*Pennisetum polyanthes*), Arhar (*Cajanus cajan*) and sutri (a type of pulse). Recently *Kankrol* has been introduced in *Kurwa*. Cowpea is their principle crop. Three indigenous cowpea varieties are *Badr badai*

(Harvested in September), *Ashwin badai* (Harvested in October; Bengali *Ashwin* month) and *Mota kosroi* (Harvested in December). It has a good demand in markets outside the state, but the villagers cannot get that benefit as middlemen buy directly from them soon after harvesting and threshing. Some portion of the total produce is kept for self-consumption and often they produce *bori* after drying the pulse paste under sun. Shifting cultivation has several common steps all over the world^[16]. Traditionally the villagers do follow certain specific steps from the selection of land to harvesting of crops to maintain the optimum productivity of land and produce. The following stages are observed in the village

- Selected area is cleaned by slashing the trees. It is called *Dade Saparam* that is done in June-July. It is done with a sickle called *Keida*. Then burning is done if required. According to them the burning of twigs helps in clean cultivation of forest land as well as to enrich soil fertility. Some trees are left in a specific distance.
- Seeds are sown in the holes dug with a *kanokudu* or *Pinu* (wooden stick) at 1.5 - 2 feet spacing.
- Weeding is done when the plants attain the knee height with *Keida*. Pesticide application is restricted to only three farmers of the village procured from *Hiranpur* market pesticide shops.
- The villagers construct a small hut called *Changi* or *Kopri* which is placed on 6 feet high bamboo poles near the cultivable land to protect crops from monkeys in daytime and from swine in night. This protection is required from the flowering stage till harvesting. Usually one member of the household stays in the hut. Each household has domestic dogs which are taken to the forest while protecting the crops from monkeys and swine.
- Harvesting requires 2-3 days depending upon the cropped area. Harvesting of cowpea is done after attaining maturity of the crop which is indicated by drying

of the crop. In this case only pods are collected and the residue left for burning in next cropping season for maintaining soil nutritional health.

- Before taking the second crop the field is left for 4 months till the arrival of monsoon. Then the field is cleaned or burnt. Maize, *Sutri*, Arhar, *Jowar*, Pearl millet and *Kankrol* are sown simultaneously leaving one hand space in each crop. They follow mixed cropping to ensure the food availability or to cope up with single crop failure. Harvesting of Maize is ready in October to November while others become ready by December to January.
- Similar procedure is followed for the three consecutive years and then the cultivation procedure shifted to the other part of the forest owned by the family.

Burning is generally practiced at the beginning of the second cropping cycle (i.e. when cowpea is harvested). But if there is rain the twigs are not burnt instead hard stems are collected to use as a fuel wood. Such traditional way of sustainable resource utilization is under transformation as evident from the revelation from one of the villager.

Earlier each family used to cultivate one patch of land in a year but with the increasing demand of hard cash and other material requirements of the family, we are knowingly practicing 3-4 Kurwa cultivation simultaneously with hired labor undermining the quality deterioration of the soil. This may not be sustainable from the environmental point of view but it is essential to sustain family and ensure some comfort.

One can easily observe the infiltration of market forces in such a remote village if (s)he travel from *litipada* to *Durio* that the diminishing forest cover is replaced by the cultivable lands on the hill slopes. Villagers practice shifting cultivation not only to sustain their livelihood but for capital accumulation by selling the produce in the market.

The upland surrounding the village hut is used for kitchen gardens usually termed as *Jotbari* by the villagers. This dry farming practice provides pulses, oilseeds and vegetables. Here they usually cultivate cowpea, maize, *kulthi*, mustard, rapeseed, lablab bean and some cucurbits. Acute water shortages create difficulty to cultivate in the summer but depending on water availability some crops like lablab bean and cucurbitaceous vegetables are grown. Another specially cultivated crop is *Shalakati*, a type of fibrous crop. The stalk is used to make Temporary door (*Bali*) and as fiber for binding and rope making.

Table 1: Seasonal crop calendar in *Jotbaris*

Season	Principle Crops
Summer	Lablab bean, some cucurbits like gourd
Monsoon	Maize, Cowpea
Winter	<i>Kulthi</i> , Mustard, Rapeseed

In plough terrace cultivation, paddy is cultivated in lowland during monsoon season. Here the land is ploughed with bullock plough. Red soil is best for cultivation. No irrigation and manures are provided to this crop. According to the perception of *Sauria-Paharia*, the water flowing from uphill carrying humus and silt is enough as manure and fertilizer. Basically transplanting is done after 20 days where labours from family and village collectively do that. Weeding is done by family labour. Threshing is done in *Chalee*, a bounded threshing yard where two or three labours are employed based on the amount of production. It is done in the month of January. Paddy threshing is done both by machine and manually beating on wooden plank (*Kaissa-bajpo-patra*). The plank is set on upside down *Okhlee* and paddy is beaten. The threshing machines are mostly hired from *Katalpada*. Winding in paddy and other crops is done taking a lot of time. Paddy winding is called *Kaissa-baje*.

Forest as Livelihood Alternative

The *Sauria-Paharia* people of *Durio* and adjoining villages depend largely on forest for major and minor forest products. Among major forest products, timber is

observed to be in large amount. The villagers cut trees during slashing in shifting cultivation. They also cut trees and branches for specific needs like housing, cart making, agricultural and household implement making like plough, grinder etc. However they use the major forest products in subsistence purpose not for commercial benefit. This resource use pattern promotes sustainable forest conservation. The National Forest Policy (NFP) 1988 allows the tribal people within and near forest to enjoy domestic requirements of fuelwood, fodder, minor forest produce and construction timber. This case of Sauriya Pahariya village does not violate the strategy of NFP 1988.

Table 2: Seasonal utility of forest in terms of important products

Season	Principle Product
Monsoon	Leafy vegetables and mushroom
Summer	Cotton, Fruits
Winter	Firewood

Among the minor forest products, they fetch fuelwood, fruits, flower, medicines, leafy vegetables, mushroom, silk cotton, honey, bidi leafs, rope (*Barori*), birds, and snake etc. This has been noticed in some other tribes too where they are completely dependent on these products [17, 18]. The availability of forest produce differs in different seasons. *Sabai* grass is available after monsoon used as fodder and making rope. Among the produces mahua fruit and flower has a great demand in market. Most of the products are sold in *Litipada* market which is 6 km far from the village.

TRADITIONAL INSTITUTIONS, CUSTOMARY RULES AND LIVELIHOOD

The imposition of external values, technologies and livelihood systems has been a main feature of colonization, imperialism and unequal relationships with traditional and indigenous peoples [19]. Today's new ideas and concepts, such as sustainable use of natural resources are easily perceived as a new version of such imposition. However sincere the intention of

government agencies (formal) in natural resource management may be, it is a fact that indigenous control, use and management over natural resources which stood the test of time has been and continue to be systematically diminished [20]. Thus, while some indigenous peoples and institutions may be willing to enter into management partnerships with government agencies, others understandably remain reluctant to any type of external influence on their livelihoods and environments. They prefer to hold to their ancestral land rights and management systems without interfacing or compromising with other systems. This may be a decision in view of cultural survival, especially where traditional knowledge systems are already fragile because of strong external influences.

Traditional institutions of various forms are increasingly involved in natural resource management in many rural areas in developing countries [21-25]. They represent established local systems of authority and other phenomena derived from the socio-cultural and historical processes of a given society. They originate from local cultures, have firm roots in the past and are variously referred to as informal institutions [26-29]. In this write up traditional institutions (social, religious, political, judicial and economic) are referred to as those structures that form the units of organization in the community in the management of natural and human resources. They include traditional authorities, indigenous organizations as well as the societal norms, values, beliefs, and practices such as festivals that ensures the management of community resources. They are self-identified human groups and structures characterized by peculiar socio-political systems, languages, cultures, values and beliefs, by a close relationship with the land and natural resources as a whole in the territory [30].

These institutions are structured and exist in every small scale community and where the belief in mystical powers exist [31]. Hence the spiritual world is the major

driving force that regulates the performance of all traditional institutions^[32] in their quest to manage natural resources. Building relationship with them leads to the establishment of a form of cooperation and respects and are important gates or entry points to communities. These institutions are imperative for natural resource management since they influence the selection and integration of externalities into the local practices. Until recently, this view has been incapacitated by colonialists limiting the capacities of rural people to solve their own problems and developing technologies and skills that serve their own needs^[31]. Increased differentiation of rural communities, introduction of formal institutions, legal and administrative frameworks, individualism injected by market forces^[33] are all major factors militating against adjustment mechanisms that derive their strength from social sanctions and community's collectiveness. Therefore, we agree with North's (1990) argument that traditional institutions can still serve as points of entry in the search for local options and broad-based approaches to the management of natural resources. Similarly, in case of the studied community the use of community resources, including human, plants and animals was done with respect and guided by livelihood requirements. The following traditional practices were observed during the study that helps in preserving harmony between man and nature.

Traditional Authorities

Traditional authorities in this write-up is referred to as the leadership structures at the community and household level which are by custom ascribed or elected (traditional forms) and provide the necessary leadership which ensures that the norms, practices, and values of the community are respected. The chief (*Pradhan*) of the village council is selected by the villagers depending on the leadership quality in terms of knowledge and physical strength. The council comprises of five or

six elders from the village to assist the *pradhan* in the governance of the village. The *Pradhan* has supervisory and law enforcing power. Disputes in the village as well as disputes between villages are settled at the village level only. In every internal situation (quarrels, labour scarcity, farm resource management) as well as external affairs (introduction of new scheme, adoption of new technology) the *Pradhan* holds a meeting with the council and other household heads to reach an agreement. The decision is well respected by the villagers.

At the household level decision making related to different social, economic and political affair usually taken by elder member of both gender but normally influenced by the expertise concerning specific activity. For e.g. in shifting cultivation, both sex are equally responsible in taking decisions concerning three broad activities like sowing, harvesting and threshing. Whereas in plough terrace cultivation women dominate the decision related to land preparation, paddy transplanting, threshing, manuring but ploughing and marketing is entirely a male affair. Again the collection of forest resources is dominated by the female and hence they know the forest better and aware of conserving the resources of the forest. The decisions regarding schooling of child, family planning and cooking etc. are strictly taken by women.

Cooperative Mechanism of Labour Utilization

The community has a distinct style of managing labour to sustain their livelihood activities in different seasons through intra-village cooperation. This mechanism at the community level is supervised by the traditional Panchayat. The total dependency ratio of the village population is 2:1. It denotes that the number young dependent on the working population (as there is no person above the age 60) is almost twice. Therefore, the villagers face acute shortage of labour during principle farming operations like slashing and

cleaning in shifting cultivation, sowing and harvesting in terrace plough cultivation, harvesting in *Jotbari* etc. They follow the system of mutual exchange of family labour indicates the existence of barter system to cope with the labour scarcity. The gender division of labour in terms of season is also an important strategy to their survival. In dry summer season, very less time is required for agricultural operations, thus productive time is spent on collection of forest produce, taking the animals to grazing and household activities like making agricultural implements, handicrafts, post-harvest operations etc. by the male members of the family. In case of female, the early hour of the day always spent on cleaning of household irrespective of seasonal variations followed by operations in shifting cultivation during wet monsoon and field preparation in *Jotbari* in winter season. In summer season female go to forest for NTFP collection almost every day as forest is their major source of livelihood.

The operation of slashing in the Sweden field requires extra labour force than family labour and it is mandatory responsibility of all family of the village to provide at least one male during the operation of the demanding family. If anybody refuses, the family is fined with Rs. 100 or Rs. 200 by the Panchayat. Sowing in *Qaaldu* is observed to be held in two phases in some cases. Firstly, it is done in the field of those families who have their own inputs as well as cash for hired labour. But if one does not have that, a meeting is called by traditional Panchayat. There it is decided that, all will help the resource poor farmer in sowing operation. Simultaneously, it is fixed that a certain portion has to be repaid to Panchayat in return after final harvest. Generally, it is consumed in some festival, feast or celebration.

Traditional Protected Areas

Traditional Protected Areas in this context are referred to as sacred groves. These sacred places are where trees and plants are allowed to grow undisturbed and

where reptiles, birds, fish and animal could have free living without fear of poaching or interference by man. Therefore there are taboos that restricted access to these sites to particular activities and members of a community. In the studied village, a patch of virgin forest called *Jaherthan* was observed where killing of animal and logging of plants are restricted. Despite the religious conversion of the villagers to Christianity, the traditional customs associated with the conservation of that sacred part of the forest is still continuing.

COMMUNITY DYNAMICS: CHALLENGES TO ENDOGENOUS DEVELOPMENT

Indigenous peoples' cultures and traditions are dynamic and responsive to the realities and needs of their time. They present a vast spectrum of differentiated institutions and organizational forms which turn heterogeneous sometimes. They are the holders of unique languages, knowledge systems and beliefs and possess invaluable knowledge of practices for the sustainable management of natural resources. Culture is a patterned way of life shared by a group of people. It encompasses all that human beings have and do to produce, relate to each other and adapt to the physical environment. It includes agreed-upon principles of human existence (values, norms and sanctions) as well as techniques of survival (technology). Indigenous communities have kept their cultures alive by passing on their worldview, their knowledge and know-how, their arts, rituals and performances from one generation to the next. Such transmission of knowledge is not uniform rather influenced by varieties of factors resulted in knowledge diversity and disagreement within the community. In a number of situations, it was learned that indigenous people and indigenous experts choose to give priority to revitalizing and strengthening the indigenous knowledge base. They see intra-cultural learning and endogenous development as a necessary prerequisite and first step towards

sustainable development. Initiatives with Endogenous Development aim at strengthening the dynamics of indigenous knowledge systems. Such initiatives do not merely study indigenous knowledge from a western perspective or build external knowledge on indigenous knowledge, but take the indigenous perspective as starting point, and end for endogenous development. But in the different historical and cultural spaces and scientific traditions, the approaches to the understanding of the existing reality (ontology), to the way people learn and acquire knowledge (gnoseology) and in the way they formulate their theories and knowledges (epistemologies) vary greatly. In the present context the variety of cultural ways to deal with knowledge show that there is quite a great variation despite the smallness of the community that are assumed to compose the reality. Thus to frame a coherent approach for endogenous livelihood strategy using indigenous knowledge, the consideration of varied dimension of knowledge is necessary. The studied community shows the variation in terms of shared knowledge

and distributed knowledge are detailed below

Shared and Distributed Knowledge

Traditional knowledge tends to be collectively owned. It may be in three forms

- technical knowledge held by all local people,
- specialized knowledge of skilled 'resource persons' and
- social knowledge held by dominant groups

In *Durio*, the knowledge and skill on various resources and its utilization are distributed in different sub sections. The table describes the prevalence of know-how and skill on the land associated activities. The activities are categorized under four broad areas i.e. shifting cultivation, settled cultivation (*Jotbari* and plough terrace cultivation), land selection and soil selection. However it was observed that in most farm related activities the entire family members are involved. But the Table 3 shows which section is more responsible for the certain activity.

Table 3: Knowledge on land

Area	Activity/ Knowledge	Expert Section	Source of Labour
Shifting cultivation	Slashing	Male- young and old	Family and hired
	Sowing	Female- young and old	Family and hired
	Weeding	Male and female- old and young	Family Labour
	Plant protection	Male- old skilled	Family Labour
	Harvesting	Male and female- all	Family labour
	Threshing	Female and male- all	Family labour
	Marketing	Male- old	Family labour
<i>Jotbari</i> and terrace cultivation	Field cleaning & preparation	Female- all	Family labour
	Ploughing	Male- all	Family and hired
	Sowing	Male- old skilled	Family and hired
	Paddy transplanting	Female- all	Family and hired
	Weeding	Female- all	Family labour
	Irrigation	Male- all	Family and hired
	Plant protection	Male- old	Family labour
	Fertilization and manuring	Female-Organic, Male- Chemical	Family labour
	Harvesting	Male and female	Family and hired
	Threshing	Male and female	Family and hired
	Seed conservation	Male- old skilled	Family labour
Marketing	Male and female- old skilled	Family labour	
Site selection	Grazing	Male and female- young	Family
	Waterbody in forest	Male- old	Family
	Habitation	Male and female – old	Family
	Water conservation	Male and female- old	Family
	Fishing	Female and male- all	
Soil selection	Red soil	Carried by male, used by female	Family
	Black soil	Female and male- old	Family
	Farm soil	Female and male- old	Family
	Yellow soil	Female and male- old	Family

With reference to forest resource utilization, the Table 4 shows that medicinal knowledge belongs to female while male is responsible for the activities associated with earning like hunting, logging of timber, collection of economically valuable forest products etc.

Table 4: Gender specific knowledge related to forest resource

Activity/ Resource/Knowledge	Expert section
Firewood collection, Medicine, Wild mushroom	Female
Bamboo, Timber for construction, <i>Kankrol</i> , Cotton, Hunting, Rope (<i>Barori</i>), Forest fruit, Fodder, Birds, Snake, Honey	Male
Flowers	Both

It is apparent from the above discussion that in the studied community age and gender is an important factor of knowledge variation. Such heterogeneity should be acknowledged in co-defining sustainable livelihood strategy to respect the individuality.

Transmission of Knowledge

Beside knowledge distribution, the transmission of knowledge is another important aspect that can influence the implementation of endogenous strategy. There are two distinct modes through which knowledge is transmitted; vertical transmission, from parents to child (inter-generational) and horizontal transmission, between individual of the same generation. In *Durio*, both types were noticed in different activities. However, the basic observation was that, the activities that permit the children to go with their elders may be characterized with vertical transmission of local knowledge. Similarly, in the activities that are performed preferably with peers, friends, and fellow farmers, the transmission occurs in horizontal path.

Table 5: Age of knowledge acquisition

Age of local knowledge acquisition	Frequency	Percentage
15 and below	20	32.78
16-30	34	55.75
30-50	7	11.47
50 and above	0	00.00

Table 5 describes the stage of transmission of different resource related knowledge. Here it is found that, most of the

knowledge is acquired by the community members in the age of 16-30 irrespective of sex. In this age, they get family responsibility and get married too that enforces to be accustomed with that knowledge. Knowledge about the resources or activities that requires less skills are obtained at the age of less than 16 years. Some jobs like chemical pest control, identification of some specific soils, making of some tools are learnt by the villagers at very late phase. Majority of the community members acquired their local forest knowledge through passive means such as observation and assisting others in collection, herding, construction or even firewood collection.

Table 6: Source of Knowledge

Source of knowledge	Number	Percentage
Father	21	34%
Mother	15	25%
Peer group	10	16%
Apprenticeship	6	10%
Experience	6	10%
Folktale	3	5%
Total	61	100%

Table 6 exhibits the different source of transfer of resource related knowledge within the community which shows a significant difference. Parents play most important role in this transmission. The process of socialization makes a child aware of his or her culture through parents. A father accounts for 34% of knowledge, followed by mother (25%), peer group (16%) and apprenticeship as well as own experience (10% each). Folktale also plays a role in passing out the traditional knowledge.

Sources of Acculturation

The ethnographic study on the tribes in India reveals a process of assimilation and acculturation of the tribal society into the great tradition. But this process of acculturation has led to the gradual loss of tribal identity. The tribals are devoid of their indigenous traits and are increasingly adopting the features of dominant society. Similar to the all tribes that comes into contact with rest part of the globe, the

studied community is also changing and adapting to external forces.

Religious conversion in the *Sauria-Paharia* tribe occurs in the name of integration and assimilation. All the villagers of the *Durio* as well as some adjoining villages converted to Christianity in the year 1995. The primary transformation through it was on the core cultural behavior. It is because, the belief and faith of a community drives to formation and change in the folk song, folk dance, folk tale, as well as tools of material culture. These are the product of human mind that is largely governed by the belief. Seasonal migration influenced the villagers in adopting dominant cultural traits. The pattern of change influenced from seasonal migration was mainly on lifestyle and consumption status. The influence on dress is noticed mostly on males. The language obtains many new words from Hindi, English and Bengali. Music is gradually governed by old and new Bollywood Hindi songs, Bengali, Bhojpuri and Nagpuri songs. The use and spread of mobile cellular phones is too impact of this event. Monetary evaluation of labour work replaced the barter economy system to some extent after migration. Apart from these two factors, formal education is too an actor of globalization and affects transition of culture widely. The pattern of transformation in this regard can be traced in the transition in language, cultural preference, health and sanitation, material culture, farming and sports etc. The population of *Durio* became more comfortable with the national language Hindi, mainly because their interaction with the teachers teaching in Hindi. Development intervention entered both through governmental and non-governmental institutions. First initiative was taken by Christian missionaries in British period. In last decade government sponsored programmes on infrastructure development (both on community and household level), health and sanitation awareness, poverty alleviation etc. were implemented by

District, Block and Panchayat authority as well as local NGOs or in collaboration with UNICEF. Transition in culture is observed in all three types of farming practices. Programmes on infrastructure development helped to construct new metalled roads which enriched the access to market.

Thus the insight emerging out of this description is the acceptance of plurality of community practices is the precondition of success of endogenous development. This means that for each 'scientific' tradition that takes part in the inter-scientific cooperation, the own worldview should be formulated, by the holders of that view themselves. The way of learning should be made explicit and on that basis epistemology can be formulated. This is not a simple process. It does involve different actors, may require time and resources, may lead to confusion, frustration or it may reveal internal differences. Therefore, it is important to systematize and make more explicit the concepts and theories behind indigenous forms of knowledge in order to share them as part of a possible co-evolution of the diversity of developmental strategy.

CONCLUSION

Indigenous peoples are not only the passive victims of exogenous discrimination and adversity. The internal dynamics of indigenous communities are also equally important issue. Certain customs within indigenous societies and recent developments such as anti-national violence and poor health should also be taken into consideration. Internal discrimination against women is a notable example, especially regarding property rights and violent behavior. As an example, in the studied community and other communities in adjoining areas, men retain the prerogative to negotiate mortgages and sell property without consulting women; this continues in spite of the Hindu Succession (Amendment) Act 2005^[34] which states that women should have equal treatment and conditions in landownership. Generational issues are also of note. Many indigenous

young have left community life in search for more 'modern' lifestyles. Their desires to become part of wider society has generated many feelings of disconnect between older and younger individuals, leading to increased community tension. Endogenous development should face the challenges of these multiple sources of discrimination and difficulties in a holistic way. Greater consciousness of local dynamics is important to ensure that indigenous peoples' issues are approached with appropriate information and caution.

Acknowledgement: None

Conflict of Interest: None

Source of Funding: None

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- How to cite this article: Raul M, Majumdar K, Chatterjee D. Indigenous knowledge and endogenous development: exploring survival strategy of a tribal community of Jharkhand, India. *International Journal of Research and Review*. 2021; 8(8): 156-170. DOI: <https://doi.org/10.52403/ijrr.20210822>
