



Extinction of Indigenous knowledge of Gond, Kolam and Pradhan

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Abstract: This research paper is based on the conducted field work in the four tribal villages of the Gond, Kolam and Pradhan tribes of Maharashtra. In the present context, the various exogenous factors are posing threats on the sustainability of the local and regional, traditional, indigenous knowledge, arts and skills of the tribal communities. It is evident to note that indigenous knowledge is area specific; it is also true that, people residing in the different regional settings have evolved their own indigenous wisdom which helps in their mere survival and assures existence. However, due course of times, modernizations, human intervention, developmental projects and policies left impacts adverse on the tribal societies. Thus these various factors which are posing threats to the preservation of indigenous knowledge. In the entire process of development and change, it is important to note that the process of change entails various challenges and comprises issues which are contested. Tribes are considered to be the sensitive one who always suffers from various changes occurred in their lives whether it is natural calamities or human led developmental interventions. The case of Gond, Kolam and Pradhan tribes predominantly residing in studied tribal belt of Kinwat in Nanded district of Maharashtra, due to the various forces, tribal's lives have undergone various changes. They still are practicing subsistence economic activities in extreme difficulties. The various modernization driven developmental interventions made so far in this region has not helped much the Gonds, Kolam and Pradhan tribes in terms of improving traditional survival strategies; in fact, it has adversely affected their indigenous knowledge and wisdom systems. Against this backdrop, this study discusses few case studies of tribal farmers belonging to above tribes and shows how their life has

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been affected by various factors and also depicts the current status of their indigenous knowledge which is on the edge of extinction in coming days.

(Keywords: Indigenous Knowledge, Change, Modern developmental intervention, survival)

Introduction

In the present context, there are various exogenous forces which are posing major threats to the sustainability of the old culture, traditional skills, arts, indigenous knowledge and wisdom based on the local resources. As we know that since time immemorial, it is true that all species of living being, on the earth, struggle for survival within their surrounding environment. However, humans are the one, who have championed in every sphere of survival, in any geographical regions. In fact, in order to deal with various challenges humans in pursuit of survival have developed various requisite skills, technologies which are based on their age-old knowledge base. However, it ultimately helps in their existence. There are various views on significance of indigenous knowledge i.e., Senanayake (2006) suggests that indigenous knowledge is viewed as the social capital of the poor, serving as their primary resource for survival. It enables them to produce food, secure shelter, and maintain control over their lives. Swiderska et al. (2011) state that for centuries, farmers have relied on indigenous knowledge as a coping strategy to adapt to challenging weather patterns and environmental changes. Apart from the use of Indigenous Knowledge (IK) it also has played a vital role in various development projects. On the same line, very significant point raised by Boven and Morohashi (2002) that incorporating indigenous knowledge into development projects allows people and local communities to actively engage in decision-making. They further emphasized that indigenous knowledge is a valuable resource for rural populations, making it a crucial factor in combating poverty and social exclusion in rural communities globally. There are many positive sides of the indigenous knowledge which helps in finding local solutions. However, the real concern is that this knowledge exists in oral tradition and is not in written form or recorded elsewhere. The same is the situation with many tribal communities who has their own indigenous wisdom but has no written form. Apparently, in contemporary context any developmental programme, exogenous forces before its implementation in a specific geographical region requires understanding about social and cultural

context. However, empirical evidences shows that the indigenous knowledge is on the edge of extinction which is off course a major concern for tribes as well as for policy makers. It was found that there are many extraneous factors are affecting the indigenous knowledge; these various factors are pushing indigenous knowledge towards extinction. The empirical findings reported that due to lack of textual form of indigenous knowledge, it is slowly vanishing which itself is an alarming situation for tribal identity.

Methodology

This study was conducted field work in the four tribal villages of the kinwat block of Nanded district of Maharashtra. The Nanded district has tribal belt which consists of five blocks which are identified scheduled areas under the Tribal Sub Plan (TSP). Out of these five blocks, Kinwat and Mahur have more tribal concentrations as compared to other three blocks of this district. Gond, Kolam, Pradhan, Andh, Bhil etc tribal communities have been staying in this region. Out of these tribal communities, Kolam is identified as Particularly Vulnerable Tribal Groups (PVTGs). However, out of these, these three tribal communities, Gond, Pradhan and Kolam have tried to maintain their old customs, traditions, wisdoms and knowledge related to the agriculture, water managements, forest managements and food preservation. But due to the outside human intervention, developmental intervention, impacts of modernizations and advanced technology had left very adverse impacts on the traditional tools, agricultural implements, arts, skills and cultures. In this view, this study made attempt to explore the different forces which are posing major threats to the sustainability of the indigenous knowledge of the local tribal people of this region. Thus, it is need to search the existing status of indigenous knowledge and pointed out the different forces which are posing major threats to the sustainability of the indigenous knowledge of the local tribal communities based on the agriculture, water and forest resources. Thus, by keeping these major objectives and views in the mind, this study made attempt to find out ground realities from four tribal villages of the Kinwat tehsil of Nanded district of Maharashtra. The Kinwat block has 191 tribal villages, 90 wadis and tands. Out of these tribal villages, study made attempt to use purposive sampling method to select four tribal villages to address the issues of extinction of indigenous knowledge in the present context. The selection of the sample were made at different levels, first at village levels, second at community levels and third at individuals levels, Out of these four studied villages, study were

identified informants from the representatives of Gond, Pradhan and Kolam tribes. Old aged tribe people, tribal farmers and tribal youth etc are the key informants for getting detail information. Despite these informants, four focus group discussions are conducted in the selected four tribal villages. In-depth interviews and case studies are also conducted with the selected informants from these villages to gather their personal views, opinions, experiences, wisdoms about the traditional knowledge based on their own experiences and got from their forefathers.

A Brief Profile of the Tribal Villages

These identified four tribal villages are covered under the Tribal Sub Plan and recently under the Panchayats Extension to Scheduled Areas (PESA). These selected four tribal villages Koalmguda, kazipod, Limguda and Bhilgaon villages have more than 75 percent tribal populations. Limguda and Kolamguda are very small villages/pods in which have Gond and Kolam tribes residence. Bhilgaon have Pradhan and Gond tribes. Kazipod is Kolampod which is part of the Jawarla group gram panchayats. Limguda and Kolamguda are also part of the Pimpalgaon village gram panchayats. Only Bhilgaon has separate village gram panchayats. These three tribal communities based on the agriculture, forest and wage labourers. Out of these three tribal communities, Kolam are PVTGs. They are few in numbers as compared to Gond and Pardhan tribes in this region. However, these three communities have social-cultural homogeneity. Kolams are isolated, shy and economically poor and illiterate. They stayed very close to the forest and nature as compared to these two tribes. But they lived nearby to the Gond and Pardhan. Gonds and Pardhan are cultivators. They are doing agriculture. Koalms also got patta under the Forest Rights Act, 2006. Now they are also doing agriculture. However, these three tribal communities are doing agriculture, but they could not meet their all needs from the agriculture, In addition to this, they gathered forest resources as supportive systems to their livelihoods. During the agricultural off season, they migrated to the nearby cotton industries of Adilabad and Nizambad Telangna state for works. This region has not other sources for incomes. This region has lack of industries. Despite this, these tribal gathered forest resources as supplementary sources of their livelihoods. They gathered bamboos, tendu pattas, mahu, charoli, foddors, gum and honey and other minor forest products. There are some traditional medicinal practioners who used medicinal plants as vaidhu to provide to the local customers. In season, these tribes collected forest resources for their own consumptions as well for sale.

Kolam are bamboo artisanal community, the people of this community make many articles from bamboos for sale. In the recent present context, due to the lack of government support to the local tribe people, they faced more difficulties to gather and store forest resources. They have not been provided store and ware houses for preservation the forest resources. As result of this, they have to sell these resources to the middleman or agents on the few prices. Due to the climatic conditions and deforestation, local tribes are not getting plenty of forest resources for sale as they used to get in the past. Therefore, the young generation of the tribes are in search of other income sources, it is seen and observed in this region that most of the tribes are migrating to the other places for income. However, government has provided irrigation facilities, modern technologies, and agricultural implements, tools hybrid seed, electric pump sets, motors and other modern equipments to the tribal farmers to increase their agricultural incomes. In addition to this, government provided employment schemes to the local labourers to stop their migrations. Overall, governmental agencies tried to provide different schemes, policies and plans for the development of the tribes on the one hand, but on the other hand, they are undermining their culture, traditions, customs, wisdoms and indigenous knowledge. All the departments of the governmental agencies working for the cause of tribal development, such as; forest agricultural and revenue and Panchayt samities are neglecting to incorporate tribal's knowledge and wisdom into account for making polices and implementation of the developmental schemes at the grass root levels. As result of this, tribes are losing their customs, traditions, rites and rituals, wisdoms and indigenous knowledge based on their own experiences and practices. These tribal communities have been staying in this region since long time. They have developed their own traditional knowledge based on their experiences on the local resources. These traditions, customs and rites and rituals have social cultural significance in their day to day life. Their local rites, festivals, customs and tractions are associated with the agricultural practices, such as land preparation for sowing, harvesting, cropping. Like the same way, they also worship the land, forest and animals. They worship sacred groves and trees and animals also. They have developed their way of life and culture and symbolic, constructive and organic relationship with the nature, land forest and animals. They have also certain taboos and certain sacred practices to the biodiversities, trees and animals. Thus, these tribal communities have very rich and deep knowledge about the local resources such as; agricultural land, forest, biodiversities, species, trees and seeds.

But in the present context, this knowledge is endangered and declined day by day. It is seen and observed in this region that, in the past, many governmental schemes, policies and farming related initiatives, implemented in this aspirational block, has been failed miserably. On the other hand the indigenous wisdom and knowledge of the local farmers and tribes have been neglected. It has been pointed out that each and every step of the implementations of governmental schemes, participation of local knowledge, wisdom, views and thoughts of the tribes were undermined and neglected by the policy makers. Thus, this study has major aim to explore the ground realities related to the present status of the indigenous knowledge of these three tribal communities in their specific regions.

Defining Indigenous knowledge

First and foremost, it is necessary to understand indigenous knowledge. There are many scholars have tried to define it in many ways. Indigenous knowledge is, broadly speaking the knowledge used by the local people to make a living in a particular environment (Warren 1991). In the realm of sustainable development, various terms are used to refer to this concept, including indigenous technical knowledge, traditional environmental knowledge, rural knowledge, local knowledge, and farmer's or pastoralist's knowledge. Indigenous knowledge can be also defined as a body of knowledge built up by a group of people through generations of living in close contact with nature (Johnson 1992). Generally speaking, such knowledge evolves in the local environment, so that it is specially adapted to the requirements of local people and conditions. It is also creative and experimental, constantly incorporating outside influences and inside innovations to meet new conditions. It is usually mistake to think of indigenous knowledge as old fashioned, backwards, static or unchanging. Warren (1987) defined indigenous knowledge as a local knowledge that is unique to a given culture or society. According to Rajasekaran, indigenous knowledge is a systematic body of knowledge acquired by local people through the accumulation of experiences, informal experiments and intimate understanding of the environment in a given culture (Cited in World Bank Report 1998). To Haverkort and de Zeeuw, indigenous knowledge is that actual knowledge of a given population that reflects the experiences based on traditions and described as a non-conventional body of knowledge that deals with some aspects of the theory, but more of the beliefs, practices and technologies developed without direct inputs from the modern, formal, scientific establishment; in this case, towards the management

of farms (Cited in World Bank Report 1998). K. Anil Kumar (2010) noted that “the adjectival word “indigenous” means “belonging to a place, native” (Oxford English Dictionary). Thus indigenous knowledge (IK) can be Defined as a body of knowledge specific to a particular geographical region. Native knowledge, traditional knowledge, cultural knowledge and civilization knowledge are synonymous terms. It is unique to a given culture, society or a country. It is seen contrast with knowledge generated within the international system of universities, research institutions and private firms, Grenier explains that indigenous knowledge (IK) is distinctive traditional and local knowledge that has evolved within specific conditions among men and women native to a particular geographic region. Indigenous knowledge is described as a cumulative body of knowledge and beliefs, passed down through generations via cultural transmission, concerning the relationships between living beings, including humans, and their environment.

It is important to note that indigenous knowledge exist in many fields which is based on local resources. For instance, there is a close relation between indigenous knowledge and ethno medicine and on the same line, Shubhandu Patra and Sharma noted that “Anthropologist believe that ethno medicine is a part of Indigenous Knowledge System (ISK), that aims to categorize plants and define their uses to treat diseases” (2021:1). There is another cultural angle to look at the indigenous knowledge, wherein it appears and gives certain information for instance in a study by Madegowda (2009) pertaining to Soliga tribes songs, he observed that all songs convey the indigenous understanding of forest plants and animals. They detail various species and facilitate the passing down of traditional knowledge from one generation to another within tribal communities, aiding in the preservation and continuation of their cultural wisdom (66). There are various local resources on which the indigenous knowledge has been generated by locals, especially tribals. The local resources such as land, water, animals, forest these all have vital role to play in the lives of tribals in this country, it has already appeared in various studies conducted so far on the indigenous knowledge.

K. Anil Kumar (2010) highlighted several key characteristics of indigenous knowledge (IK). He noted that one of its defining features is that it is developed by tribal or rural communities residing in a specific geographic area. These early groups are often referred to as aboriginal people. However, Kumar clarified that IK is not limited to the knowledge of aboriginal people alone. Nakata further argues that the idea of IK solely representing indigenous people's knowledge does not reflect its

current usage. According to Nakata, indigenous people's knowledge can be seen as a subset of the broader concept of IK. However, it is important to note that IK has been evolved over the period of time and local people have enriched it with their experiences. It is also important to note that indigenous knowledge is a common for all local and does not hold by individual.

Indigenous Knowledge one Ray of Hope

It is found in many studies on the usefulness of indigenous knowledge that it has helped the resources to recover in its early stage. There are some studies like Bhaskar et. al (2015) have discussed the successful application of traditional knowledge has changed the land, they noted that application of traditional knowledge on a massive scale is the re-greening of the Sahel Burkina Faso, Mali and Niger where hundreds of thousands of poor farmers have turned millions of acres of what had become semi-desert by the 1980s into more productive land (76-77). Swiderska et. al. (2011) also discussed the positive sides of the indigenous knowledge such as this knowledge has given rise to thousands of traditional crop species and varieties that local farmers have domesticated, improved and conserved over generations. The communities of the Potato Park in Cusco, Peru, for example, hold more than a quarter of the 4,000 or so potato varieties found in the country. K. Anil Kumar (2010) noted that world's population is steadily increasing; poverty is growing and natural resources are degrading. Some 550 million of the 1,370 million hectares of global arable lands have suffered degradation as a result of non-sustainable cultivation (5). In fact, it is observed by many scholars that whatever development projects designed with modern scientific knowledge, implemented in various regions and areas, have failed miserably in the past. For instance, we take example of Saudi Arabia discussed by Fre (2018) i.e. as per the World Bank data, just 1.6 per cent of the country's land is arable, and high-intensity agriculture is not customarily practiced there. But because it had more money to invest in this, Saudi Arabia launched a big push to irrigate its land and grow grain as a result of the OPEC embargo in the 1970s. Through massive water extraction from its subterranean aquifers, it was able to boost grain production from a few thousand tons in the mid-1970s to a record 5 million tons in 1994, according to Postel. But doing so it imposed a burden on the scarce water supply, and in 1996 grain output fell to fewer than 2 million tons. Despite recovering, Saudi Arabia continues to face water-related problems (Fre, 2018). It is the fact that the technologies introduced during the Green Revolution helped address the

demand for food and fiber but proved costly due to the expenses of technology transfer, soil erosion, and the loss of disease-resistant plant genetic materials. While traditional agricultural practices, as originally implemented, cannot be fully revived nor meet the food demands of a growing global population, it remains important to preserve and utilize local knowledge. This knowledge reflects deep expertise and environmental understanding developed over thousands of years. Pertaining to the marginalization of indigenous knowledge and its adherents' communities in the Global South, Fre (2018) noted that it is not a historical accident, in fact it should be analyzed in the above discussed context. She further noted that, economic (neoliberal) governmentality and the destruction of the commons have been used in agricultural policy practice, which is as a result driving out indigenous knowledge system and practices in the Global South (14). The above literature depicts that the real reason for failure in many areas is result of our complete dependence on scientific knowledge which does not provide the sustainable solution for the problem. It can be further noted that before the implementation of any project in any geographical area, and the local context should not be neglected.

Exogenous Forces to Extinction of Indigenous Knowledge

In contemporary context, the condition of the indigenous knowledge appears to be mundane because of modernization and huge developmental intervention, outsider's perspectives of planning and development had left very adverse impacts on the traditional economy of the local tribal people. However, it is important to note that in the academic field, where there is dominance of modern science, today, has questioned many traditional things which also includes indigenous knowledge for instance some scholars like Zaremariam Fre (2018) have noted debates around indigenous knowledge system and its relevance, she noted that, there are specific debates being waged between proponents of indigenous knowledge and of scientific knowledge in the fields of food procurement, agriculture, food security and knowledge system (19-20). She further discussed that the pro-science proponents or the evangelists of the green revolution school would stress the insufficiency of indigenous knowledge perpetuates system of repression (20). On the other hand, Fre (2018) also noted that "many elements of modern science (modern medicine, agriculture, mathematics, etc.) are partly rooted in indigenous knowledge principles, a historical truism which is often neglected" (12). There are many examples displays that how indigenous knowledge has helped the modern state sectors such as forest

departments officials, make note of the wild animal's presence based on its footprints and noise these all comes from indigenous knowledge.

In the context of this, the significant point to note is that indigenous knowledge has always helped in some ways in searching local solutions, but it is also true that when we have large population which requires large production of food, in this case indigenous knowledge may not be in help. In the case of local knowledge, study identified issues from the field that the old aged local tribes expressed their views about the neglected views and thoughts in the design of policies related to the land, water and forest managements. These people argued that they have very rich and deep knowledge about this region, biodiversity, plants, trees and water sources. As result of this negligence of local knowledge, they were alienated and excluded from the benefits of programs and policies. It is seen that ITDP and other governmental agencies imposed their schemes on the tribes. They couldn't see the need and requirements of the tribes. The local tribal farmers are worried about the new agricultural technologies, implements and tools; they did not have training how to use them and how to protect them.

It was observed that various external forces, such as modern technology, hybrid seeds, chemical fertilizers, pesticides, and market dynamics, have drastically impacted their traditional indigenous farming practices. Subsequently, most of the tribal people around 90 percent have moved toward a modern cash cropping pattern. They believe that these modern cash crops, like cotton, required less time for harvesting, modern hybrid crops like cotton yield money in less time. In the present context, the local tribal farmers are facing difficulties to sustain with the traditional agricultural practices. However, study identifies from the tribal villages, that there are some tribal farmers who tried to preserve traditional or indigenous seeds of staple foods, fruits and vegetables. But they are not getting more productions. However, other farmers are getting more production by using modern hybrid varieties in their lands. The modern hybrid varieties are taking less time for production as compared to the traditional one. As result of this, all tribal farmers of these four villages are turned to the hybrid varieties such as, mono cropping and cash cropping pattern. In early days, they used to take staple food and did practices of multi-cropping in their respective lands. They also used to cultivate indigenous seeds, with organic manures, pesticides and cow dung as fertilizers. They were self-sufficient; they were not attached with agricultural markets, now paradigm has been shift from self sufficient to market oriented agriculture. As result of this, tribal farmers becoming depended

upon the markets. They are taking loan from the middle man and agents, they take advance hybrid seeds, fertilizers, pesticides from the shop keepers in advance or on conditions to return and sale their whole production to the same shop keepers to repay their loans. This has become cycle in this region. Each and every year in the seasons, tribes took advance loan from the money lenders to purchase hybrid seeds, fertilizers and pesticides.

The Indigenous Knowledge of Local Tribal Farmers

It is seen and observed in these villages that modern agricultural tools, implements are given to the tribal farmers. Modern technology, tools and implements are replacing old notions attached with the implements of tribes. Tribes are losing their emotional attachment with the modern tools and techniques. As the same, they are also losing their arts and skills of making traditional tools and implements. They learnt these skills from their forefathers. Due to the intervention of these modern agricultural implements, the young farmers are losing the arts and skills of making plough, sickles, phawde, wakar, tifiyan and other implements. The old aged tribal farmers of this region have indigenous knowledge and techniques to prepare sustainable agricultural implements. These farmers also used to preserve traditional ways for keeping indigenous seeds for next year for sowing. They used certain medicinal plant for the same. These farmers also used to keep grains in the Pave for long period of time to eat in the food crisis. Thus, the local farmers have developed their skills and arts making different required things for their daily uses. But due to intervention of modern and alternative tools and techniques, they are losing these traditional skills and arts.

The local tribal farmers have knowledge about the nature and qualities of the land, water, forest and resources. As per their nature, they used to cultivate crops in their respective lands. Still some framers of these four villages did these practices. Farmers from this region categorize lands on the basis of the soil type and quality. Based on the quality and type of the soil found in different farms determine the productivity of the land. They divided their land into following types i.e., 1) Chunkhadi land on which the farming is done but yields less harvest. 2) Kali land farmer from this village consider this land as the best and ideal for farming. 3) Murmadi land this type of land is close to the hills and yields less harvest. 4) Gotali land farmer consider this land also not much suitable for farming. However, the village has only 30 per cent land which is black soil and rest of the land covers

other types of soil which cause less harvesting. Apart from soil types and adoption of modern farming there are other issues as well affect the farmer. It was found that the poor tribal farmers in this region face significant challenges in managing the investment required for modern farming, which demands high costs. Farmers shared that agents from the nearest market provide the initial investment for inputs but charge exorbitant interest rates, particularly from the poor tribal farmers. The investment includes hybrid seeds, fertilizers, and pesticides, with interest rates often being double the actual cost of the inputs. This situation gradually traps farmers in a vicious cycle of poverty. Another issue identified was the ecological imbalance caused by the growing number of wild pigs in the area, which poses a threat to farming. Farmers mentioned that there is no control over the pig population, and their increasing numbers are devastating the crops. As a result, farmers are spending more time protecting their fields. Although the forest department has installed fencing to prevent animals from entering village fields, this measure has not been effective. As a result of these many farmers are turning towards non-farm activities for their end means.

Repercussions of Neglecting Local or Regional Context

It has been pointed out in the focus groups discussion and in-depth interviews in the four studied villages that, due course of times, the policy maker and planners had neglected and undermined the wisdom and local knowledge of the tribal women, without their concerns and views, need and requirements, they tried to impose their programs, policies and schemes on the tribes. These policy makers couldn't understand the need and requirements of the local people. They did not take into account the local resources, regions. There is a significance of indigenous knowledge as far as region specific policies and programs are concerned. But before going to that discussion, we need to understand that how with modern scientific knowledge have contributed in various developmental initiatives with negative outcomes at the end. However, there are many studies have found that the modern technologies are not always championed the battle fields of solutions for human problems.

It is the fact that, considering and understanding the local context, not only gives an idea to a developmental practitioner but also gives a right direction towards seeking the possible success for the project in locally accepted ways. It is also imperative to see that why to studying indigenous knowledge, in the present era, in the context of modern technology use is on its peak when it has spread its

wing so high. In fact, we have to introspect that are we moving towards sustainable development with modern technological interventions in all fields, the answer to this question is ironically no. For instance, in agriculture, in order to generate massive quantity of food, is only possible when we use of modern technology, we have to depend on hybrid species which require factory made fertilizers, poisonous pesticides etc., and on the other hand, these inputs require more cost. Considering the modern agriculture with high inputs investment not only brings down the soil health but it pushes small and marginal farmers in the trap of debts. Consequently, soil health and farmers indebtedness has become a major concern today as we have compromised everything in doing this. It is important to note that there is a major loophole in the modern developmental initiative in the field of agriculture.

There is a significance of sustainability in development intervention. The global institutions like World Bank, United Nations and others have focused on indigenous knowledge and its significance in local area development program. Swiderska et al. (2011) highlighted the increasing recognition of indigenous knowledge, noting that the Intergovernmental Panel on Climate Change (IPCC) has acknowledged the importance of indigenous knowledge and crop varieties in climate adaptation efforts. Additionally, the Institute of Advanced Studies at the UN University recently identified over 400 cases where indigenous peoples have contributed to climate change monitoring, adaptation, and mitigation. Consequently, in 2010, the parties to the UN Framework Convention on Climate Change made a decision on enhanced adaptation action, emphasizing the need to incorporate both traditional and indigenous knowledge alongside the best available scientific practices.

However, we have to understand that the modern technology does fail in answering the issue of sustainable development in the field of agriculture. On the other hand, it is indigenous knowledge which has the answer to the questions of soil health issues and debt trap created by the modern technology in agriculture as it does comprise low input investment.

The above situation applies to India as well, there are many cases of traditional land accessed by the tribal's have become state property and that land became declared protected areas. As result many tribal's faced resettlement and forced sedentarization, their age old practice of shifting cultivation got banned; their subsistence economy got destructed harming the existence of indigenous knowledge pertaining to land, water and forest. The following case study discusses how indigenous knowledge is on extinction.

Case Study 1: Kolam an Indigenous bamboo artisanal worker facing extinction of indigenous knowledge

We conducted an in-depth interview with an elderly man, Laxman Meshram, who belongs to the Kolam tribe and is around 65 years old. His livelihood is making bamboo artisanal products with his wife. They craft various items from bamboo, including baskets (Topli) of different sizes—large, medium, and small. These baskets are used for multiple purposes, whether for household or farm-related activities. Additionally, the articles are made based on customer demand. When asked about the sale of the baskets, we learned that local non-tribal agents buy the baskets from Laxman at half price and sell them for double in the market. Laxman claims that, as a member of the Kolam tribe, he is not allowed to sell the baskets directly in the market because local agents prevent him from doing so. This highlights the economic exploitation faced by the tribe at the hands of non-tribes. For each basket, Laxman earns between 100 and 150 rupees, which he uses to buy basic household necessities such as groceries—rice, oil, chilies, masala, etc. While they receive rations from the Public Distribution System (PDS), they claim that the quality of the rice they receive is poor, so they also purchase a sack of rice from the market for 500 rupees. It was also found that, in earlier times, the Kolam tribe used to barter their bamboo products for goods, but now they sell them for money. More than ten years ago, they used to make kangli, a large bamboo storage container that was commonly used by households to store grains in large quantities. However, this product has since been abandoned, and Laxman no longer makes it. Instead, Laxman and his wife now create bamboo cases for covering water bottles. This innovation has been well received and admired by many, but they only produce it based on customer demand.

Bamboo artisanal work involves a series of activities, such as procuring raw bamboo from the forest, cutting it with an iron knife, shaping the sticks, and finally crafting the end product. The most dangerous task is sourcing bamboo from the forest, as going alone poses the risk of attack by wild boars (Ran Dukkar) or bears (Aswal). For this reason, the Kolam always ensure they go in pairs, and Laxman always accompanies his wife. They believe that being in a group discourages wild animals from attacking. They carefully select bamboo that is ideal for artisanal work, particularly those that can stretch easily. Laxman explains that during the summer, when the bamboo dries out, they need to water it before using it for crafting. He also notes that if a bamboo tree produces seeds, it is seen as a sign that the tree will die

and is no longer useful. In fact, the appearance of bamboo seeds is considered a bad omen by the Kolam. When asked about the current generation's willingness to learn bamboo artisanal skills and knowledge, Laxman said they are uninterested and mostly occupied with their mobile phones. He further claimed that his generation might be the last to carry on this work. Laxman and his wife are concerned about the possible extinction of their indigenous knowledge, wisdom, skills, and bamboo craftsmanship. In Kolamguda, where all Kolams are also known as Burud Kolam, only two individuals continue the bamboo artisanal work, while the rest are involved in farming or daily wage labor. This situation highlights how traditional bamboo-related knowledge is slowly nearing extinction.

Case study 2: A recipient of government agricultural policies sponsoring modern technology and impact on indigenous techniques and implements etc.

We conducted an in-depth interview with Bhimrao Gedam from Limguda, a middle-aged Gond man around 55 years old. Bhimrao by occupation is a farmer. He shared memories of his childhood, explaining that he and his father used to cultivate their land using traditional agricultural implements, tools, techniques, and seeds. However, over time, he shifted towards modern agriculture. As a tribal farmer, he was fortunate to receive various benefits from the state agricultural department under different schemes. These included a tractor under subsidy, a thresher, a cultivator, and a rotavator. These modern implements replaced their traditional ones. However, Bhimrao have become a agricultural service provider in a village and surrounding area. To Bhimrao other farmers pay him ploughing and other land related processing which was in olden days done by indigenous agricultural implements. A key feature of the indigenous agricultural tools was that they were locally made using indigenous knowledge and wisdom. However, over time, they lost their significance, and like Bhimrao, other farmers in the village also abandoned their use. It was observed in the field that, most of the modern agricultural implements are unused by tribal farmers due to lack of training. Bhimrao received no training on using modern agricultural implements. Whatever, skills he has learnt it is by observing others non-tribal farmers. He shared the need of requirement of training skills to the farmers form this area. Bhimrao explained that in traditional farming, they practiced multi-cropping, relied on organic fertilizers, traditional seeds, and implements, but now those methods are no longer in use. Currently, he cultivates cotton and pulses

such as *tur dal*, *mung dal*, and *udid dal*. The pulses are primarily for household consumption, as they are a staple food, and are sold only when there is a surplus. On the other hand, cotton is sold in the nearest market for income. Bhimrao noted that in the past, they relied on a barter system to exchange goods, but now they are entirely dependent on money. However, the cultivation of pulses still reflects their reliance on a subsistence cropping pattern. Bhimrao mentioned that in traditional farming, they used to preserve seeds using the leaves of the *Ghogurli* tree, which had the ability to keep seeds viable for many years. However, this traditional practice of seed preservation is no longer in use, and much of the traditional wisdom regarding preservation techniques has disappeared. However, Bhimrao still preserves some traditional agricultural tools and implements.

Case Study 3: Few indigenous farming practitioners and scarcely available indigenous knowledge

We conducted in-depth interviews and a focus group discussion (FGD) with members under 40- to 70-year-old age group of the Gond and Pradhan tribes from this village. A 55-year-old farmer, named Gunaji from the Pradhan tribe expressed concern about the potential extinction of their indigenous knowledge and age-old farming traditions. However, farmers from Bhilgaon reported that there are still some individuals in this village practicing traditional indigenous farming. They reported that some farmers in this village grow traditional black sesame seed *til* only for deity worship purposes. Only three farmers whose land is close to the pond are practicing traditional farming. They cultivate various crops, including rice, *jowar*, *tur*, *mug*, *udid*, chili, brinjal, and tomato, but face many difficulties in doing so. They shared some reasons for not continuing with indigenous farming that while indigenous crops take longer to grow and harvest. On the other hand, there are no suitable prices offered in the market for indigenous seeds, and there are no incentives to support them.

Conclusion

There are many things which come under the purview of indigenous knowledge some of them like indigenous artisanal work such as bamboo making and indigenous farming. However, Gond, Kolam and Pradhan tribes, residing from an aspiration block Kinwat, Nanded district, Maharashtra, are witnessing extinction of their age-old indigenous knowledge. Apparently, farming itself has become challenging

for farmers from this aspirational block. However, few farmers who are still doing indigenous farming keep an indigenous model for new farmers, their indigenous knowledge need to be documented. Most of the new agricultural implements and its proper use need some training by the concerned government department. It was found that identification of the beneficiaries is not done on the basis of the local farmers needs. In most of the cases, government department, in order to complete the targets, just imposed schemes, on farmers; they neglected local needs, requirements and interest of the farmers. But one thing is clear that tribes from this Gondwana region their indigenous knowledge is on the edge of extinction day by day. Thus, there is urgent need to preserve these indigenous knowledge is for future generations and for sustainability of the culture, customs, traditions and rites and rituals of the tribal communities. Tribe and nature has very complex, complicated, organic, symbolic and constructive relationship. Tribes have possessed their culture in the lap of nature. We have to protect both nature and culture of the tribes.

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