



Loss of Tribal Culture through the Modernization of Agriculture

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To Cite this Article

Baburao Jadhav & Pramod Lonarkar (2025). Loss of Tribal Culture through the Modernization of Agriculture. *South Asian Journal of Social Sciences*, 1: 2, pp. 159-182.

Abstract: This paper is based on the conducted field work in the five Kolam a Particularly Vulnerable Tribal Groups (PVTGs) villages of Nanded district of Maharashtra. The major aim of this paper was to explore impacts of advance and modern agriculture on the loss of tribal culture. Tribal Communities like Kolam PVTGs in Maharashtra is losing their culture through the process of advanced and modernization of agriculture. Under the name of development and modernization, state is modernizing tribal agriculture by providing modern and advanced agricultural technologies, High Yielding Varieties and hybrid of seeds, chemical fertilizers and pesticides. As result of this, tribal farmers are adopting modern and advanced agricultural technologies, mono and cash cropping patterns. They are losing their old aged indigenous agricultural systems, multi cropping patterns, subsistence agriculture and indigenous techniques of doing agriculture. State and its agencies are providing and motivating tribal farmers to the mono cropping and cash cropping. In the present context, the Kolam farmers are in dualism between the traditional and modernity. The old generation is worried about the loss of indigenous knowledge, skills and arts of doing agriculture on the one side and on the other side; they are losing their collectivity, social relationship and culture associated with the agriculture. The Kolam has developed spiritual and religious relationships with the land, local deities, trees and animals. On the Certain occasions, such as, land preparations, sowing, weeding and harvesting, the tribal farmers celebrated certain agricultural rituals, festivals and functions. They also worship land in the form of mother earth and Goddess. Thus, these local tribal farmers developed their culture along with the agriculture. But in the present context, due to the outside interventions, modernization and commercialization of agriculture is replacing the old aged indigenous agricultural systems of the tribes based on their own wisdoms, experiences and knowledge.

Keywords: Agriculture, Crops, Commercialization, Culture, Implements, Loss and Modernization)

Introduction

The Kolam are a Particularly Vulnerable Tribal Group (PVTGs) are mainly found in the forested regions of Yavatmal, Wardha, Chandrapur and Nanded districts of Maharashtra state. Traditionally, Kolam culture has been closely integrated with forest ecology, shifting cultivation and subsistence cultivation and subsistence based agriculture. The modernization of agriculture has brought significant changes to their economic life, social relations and cultural practices. However, earlier studies focused on the ethnographic profiles, developmental issues, displacement and poverty of Kolam tribe in detail, but there are very few attempt is made to focus on the impacts of modernization of agriculture on the Kolam culture. Thus, this study made attempt to explore the impacts of modern tools and techniques of agriculture on the Kolam tribal farmers in the present context. However, the tribal farmers and rural peasant who have been possessed indigenous and traditional agricultural knowledge based on their own experiences and wisdoms. These local farmers learnt this knowledge from their forefathers and old aged generations' people of their respective communities. But due course times, under the name of development and modernizations of tribal agriculture, this old aged agricultural system based on the indigenous knowledge, wisdoms and experiences of tribes are replaced by the advanced and modern agriculture. Thus, in the present context, there are still some local tribal communities or farmers who have possessed indigenous knowledge, wisdom, tools and techniques of doing sustainable agriculture in their specific regions. But they are also facing problems to sustain with old aged indigenous systems of agriculture due to the intervention of modern technology in agriculture which are replacing the old aged indigenous systems of doing agriculture in the present context on the one hand and on the other hand, these local tribal farmers are not only losing their indigenous knowledge systems, but also they are losing culture which was associated with the traditional agriculture. Thus, there is urgent need to explore and identify the issues for addressing the problems of tribal farmers and their culture associated with the agriculture. In the context of Indian agriculture and tribes, we know that each and every community has its own specific regional indigenous knowledge system related to the local resources such as, agriculture, hill, forest, water and other local resources. This knowledge is contextual and region and community specific. Therefore, there is need to document and explore this cultural heritage and indigenous knowledge systems. Because this is the last generations who have possessed indigenous knowledge about the agricultural tools,

equipments, indigenous seeds and varieties, method and techniques of preparing green manures, pest for controlling crop diseases and crop protection. Otherwise, the youngest generation of tribal and rural community in present society is not interested in doing agriculture. In the present era, Indian agriculture is in crisis. Even though, state wanted to double the incomes of Indian farmers. But in the present context, farmers are facing many crises. They are not getting fix prices. They have to spend a lot of money on the inputs expenditures and they don't have any grantees of the production. Despite this, climatic conditions and ecological imbalances are also posing major threats on the agricultural productions. Thus, the many internal and external forces are responsible for the loss of interest in the doing agriculture. However, those who are doing agriculture are adopting modern methods and tools are replacing old methods, technology and associated skills, knowledge, wisdom related to the agricultural operations.

Categorization of Agriculture

Different agencies try to categorize agricultures into different types. However, Indian tribes and rural communities are engaged with agriculture. They have developed very harmonious relationship with the agriculture as compared to the western civilization and societies. The Asian and Indian people have harmonious relationship with the agriculture. Their culture is not separated from the agriculture. They developed their culture along with the agriculture. But, the multinational seed, chemicals and fertilizers companies have adopted commercial approach towards the agriculture. They treat agriculture as commodity. It is seen that Multinational corporations categorized agricultural into three categories such as, Industrial agriculture, Green revolution agriculture and Low Resource or Resource-Poor Agriculture. Indian tribal agriculture is considered as low resources or resources poor agriculture. Therefore, after independence, an attempt is made to modernize tribal agriculture by adopting modern and western agricultural technology. Green Revolution is adopted for getting more foods to meet the needs of the Indian people. Under the name of sustainable development, Multinational Corporation and international agencies like IFAD and others are introducing modern tools, technologies, High Yielding Varieties, Fertilizers and pesticides for getting more productions. In the present context, Organic farming and sustainable developments are the new terms are used by the multinational corporations and agencies in the present context to modernize agriculture and get more production. However, they

are not reviving old aged indigenous methods of the local people based on their experiences and wisdom. It has been already pointed out by many earlier studies that tribal used to do shifting cultivation in very rational and sustainable ways without harming the local biodiversities. The national policy of Agriculture seeks the idea to actualize the vast untapped growth potential of agriculture, strengthen rural and tribal infrastructure to support faster agricultural development promote value addition to agriculture product, accelerate the growth of agro business, agricultural markets, agro based industries and discourage distress migration of rural and tribal labourers to urban areas, efficient use of natural resources like soil water and fair application of modern technology practice of High Yielding Varieties of crops (HYV), use of pesticides for control of diseases, use of chemical fertilizers, provision of bank loans, introduction of subsidy policy etc for agricultural growth etc have been taken into considerations. For this, irrigation facilities and big dams were constructed for the growth of agricultural production. Thus, these were the initiatives taken by the governmental agencies. But the impacts of these policies are not impressive and positives on the life of the tribal and rural farmers. Thus, it has been happening since long ago under the name of modernization of agriculture which is replacing our indigenous knowledge systems based on our experiences and empirical knowledge of the our forefathers. However, we can't find universal model and types of agriculture in India across the state and regions. Unlike other agriculturalist societies, these tribes also classify the land on the basis of topography, soil colours, texture and water retaining capacity and grow specific crops on specific soil types. On the basis of its water retaining capacity, they classify land into different types. As per land or soil quality, they chose the seed to grow in the same.

Tribal Agriculture

The Indian tribes have different types of land ownerships patterns across the states and regions. However, we can find different types of patterns of tribal agricultural. In the early days, in most of the tribal communities in which they have practice of community ownerships patterns and all villagers have communal ownerships on the all village lands, common property resources and natural resources. They don't have private ownership patterns. They don't accumulate more resources. They gathered only required resources for their urgent needs and they don't have practice to accumulate for future. They have traditional rights or community rights over the

village community forest lands or resources. They used to do shifting cultivation/ jhum agriculture. But, now there was ban on the shifting cultivation, hunting and gathering forest resources. However under the Forest Rights Acts, (FRA), 2006 individual and community ownerships right was allotted to the traditional forest dwellers communities and tribes of India. Due to this provision, some of them got patta of the land for cultivation. But, many cases of regularizing patta of ownerships are still pending also. However, in the case of this study region, some of them got patta under the FRA on the certain conditions of the forest departments. Thus, it is very complex to reveal the relationships between tribes and agriculture in the context of Indian society. There is no similar kind of pattern emerged in this context. However, some studies pointed out and focused on the relationship patterns between tribes and agriculture.

Thus, there are some studies which pointed out the relationships patterns of tribes and agriculture. (Elwin, 1939) studied on the Baiga community and find out the myth / legend prevalent among the Baiga that they believed in that where *Bhagavan* (God) instructs Nanga Baiga, their founder ancestor, of the gift of shifting cultivation bestowed on the Baiga. Thanjua Mummuidi (2024) focused on the relationship between traditional way of cultivation and its relationship with the culture of Konda Reddis (Andhra Pradesh state) and podu, their traditional way of cultivation (shifting cultivation). Podu is not an isolated cultivation technology; it is, for the Konda Reddis, the prism of their culture. A recent study by Mundoli et al. (2016) focuses on the livelihood transitions among the Soligas tribe in Western Ghats of Karnataka that followed the banning of shifting cultivation in 1974 with the declaration of their habitation region as a wildlife sanctuary. As a result, the Soliga habitations were restricted to specific locations and settled cultivation was introduced. In the first decade, they continued cultivating multi-crop food grains that included millets, pulses, fruit, oil seeds and vegetables. Further her pointed out the changing nature of cropping patterns of the Soligaa tribe from the early 1990s to 2015, cash crops (coffee, cotton) slowly replaced food crops. Everyday food consumption was now purchased through cash and largely from the Public Distribution System. Burman (1977) pointed out the land ownerships patterns in the North East tribes of India. His study focused on the land ownerships patterns among the tribes of Khasi, Garos and Cheros. In the case of Khasis of Meghalaya land is owned either jointly by the clan or privately as per the Garo tribes, ownership is according to the lineage group. In some tribal communities have

power to the Village council to transfer the land? IN case of the Chero tribes of Manipur land owned commonly by the whole village and whole village have equal rights on any parts of the village. Kumar (2014) discusses the case of how Adivasi shifting cultivators in Orrisa have been deprived of tenurial rights to their land by classifying it under ‘forest land or revenue wasteland through a deliberate policy aimed at stopping shifting cultivation. Sabar (2010) study focuses on the Primitive tribal community which is Chuktia Bhunjias living in Maharashtra, Chhattisgarh and Orissa continue to practice traditional agriculture using bio-cultural resources. Further he argues that we have to understand as the embodiment of local agricultural practice and knowledge of the farmers concerned and that embraces how they variously express, negotiate, and share the meanings and relationships embedded in their soils, ecologies, cuisines, and practices. Thus, he critics that the policy makers have neglected to understand this relationship between the tribes and resources. Prasad (2016) points to how, ‘the Left linked the question of modernization and technological intervention in agriculture to social engineering and attempted to use this perspective to tackle the problem of tribal agriculture and upgrade shifting cultivation. Jadhav et al (2024) study of four tribal villages of Maharashtra focused on the extinction of indigenous knowledge of the Gond, Pardhan and Kolam tribes due to the modernization and developmental process in the present context. Sitakant Mahapatra (1998) His study based on the field insights of the four tribal villages of the Mayurbhanj district of Orissa. His study pointed out the impacts of modernization and technologies on the tribal agricultures. This study explores the technological and cultural constraints on the tribal farmers. This study focused on the cultural constraints on the way of modernization of agriculture. In the context of emerging discourse on the tribal agriculture, social scientists look at “alternative agriculture” to challenge the concepts of “growth”, “capital formation” and “liberalization” enumerated in agricultural policies (Sabar, 2010). The available literature depicts that there is change in the relationships between the old or traditional agricultural patterns and modern one. However, the existing literatures on this relationship patterns pointed out many issues associated with the interlinkages between tribes and agriculture.

Thus, the existing polices neglect to incorporate indigenous methods of doing agriculture of the local tribal people. Instead of that, these organizations introduced modern or commercial patterns of agriculture which is shifting the traditional and indigenous methods of doing agriculture.

Methodology

In view of understanding modernization of tribal agriculture in the present context, a study was undertaken in the five Kolam tribal villages of (Kinwat block) of Nanded district in Maharashtra. The majority of the Kolam are found in the Yavatmal, Wardha, Chandrapur and Nanded districts of Maharashtra. However, this study will be focused on the Tribal Belt of the kinwat block of the Nanded district of Maharashtra state. The Kinwat block is identified as tribal belt under Tribal Plan. This block has 134 Gram Panchyats which comprises 191 villages and 105 Tandas and wasti. Out of these 134 Gram Panchyats, out of these, this block has 27 Kolam pods, in which Kolam tribes lived. The Kolam pods are places in which Kolam lived. They settled their different wastis from other tribes' and castes. The Kolam would like to live isolated and separate locations than others. They wanted to maintain their identity. Out of these 27 Kolam pods, five Kolam pods were selected for intensive study. The selections of the tribal Pods/ villages are based on the views of the study objectives. All 27 Kolam Pods/ villages are covered under the Panchyats Extension to Scheduled Areas (PESA). Under this act, tribal Gram Panchyats were given more power to take decisions for their own development. Further to provide justice to the tribal communities which had been denied historically which was given to them under the implementation of Forest Rights Act, 2006, the pattas of lands are issued to the tribal and traditional forest dwelling communities. However, due to this FRA, some Kolam tribe also got pattas of the land for cultivations; however, some Kolam farmers are also struggling to legally regularize the pattas on their names. Under this FRA, individual as well as community ownership is given to the tribal and other traditional forest dwelling communities. Despite these two major provisions, other welfare, developmental schemes are implemented in this region for the overall tribal development. In the case of Kolam tribe being PVTGs, on the priority basis, more attention and focus was given for the overall development of the Kolam tribe as compared to other tribal communities of this region. However, being PVTGs, Kolam are noticed as shy, timid, illiterate, isolated and based on the primitive technology. The Kolam are still depended upon the forest, agriculture and local resources for their livelihood and survival. They gathered fuel wood, fruits, grass, foddors, medicinal plants and minor forest products for their own consumptions and marketing also. Kolam also developed skills and arts to prepare many articles from the bamboos. They are good bamboo artisan. The researcher has field exposure of this region from the last more than one decade. However, for this research study

purpose, qualitative methods are used. Purposively, study made attempt to select five Kolam Pods/ Villages for intensive study. After selection of the villages, the five field visits were arranged, one visit in each selected village for intensive study. The field work was conducted in the months of November and December of the years of 2023, 2024 and 2025. The qualitative information was gathered through the in-depth interviews and focus group discussions with tribal farmers. Further two case studies are developed to explain the emerging trends in the tribal agriculture. In-depth interviews were also conducted with the old and middle aged farmers to explore their experiences and views on the modernization of agriculture and the loss of their indigenous culture associated with the agricultural practices such as, use of modern agricultural technologies, tools, fertilizers, pesticides and moving towards from multi-cropping patterns to mono and cash cropping patterns.

Before modernization, Kolam were engaged with shifting cultivation (podu) and small scale settled farming. They used indigenous seeds, mixed cropping and rain-fed agriculture. They were dependent upon the forest produce such as, tubers, fruits and honey as supplement to their livelihoods. Agricultural activities were guided by ritual calendars, ancestral beliefs and nature worships. Thus, agriculture was not merely an economic activity but a cultural institution linked to festivals, cosmology and social organization.

The Livelihood Sources of the Tribes

The major livelihood sources of these tribal communities are agriculture, forest and local resources. The Kolam is still depended upon the agriculture, forest resources and livestock. Traditionally, they used to do shifting cultivation and bamboo artisan community. But now they are doing settled agriculture. Under the different irrigation schemes, governmental agencies try to provide water facilities to the land of tribal farmers. However, these tribal communities used to do shifting cultivation in the past, but now there is ban on the shifting cultivation, gathering foods and hunting of the traditional forest dwelling and tribal communities. It is pointed out that these tribal communities used to do practice of shifting cultivation in communal ways and they had not practices of individual patta or private ownerships. They have community ownership, they don't have idea of private property and commercial and market approach towards the agriculture. They used to get their traditional foods for subsistence and survival. They had their own traditional patterns of sowing, growing, harvesting, managing and preserving the staple foods. They developed their

own agricultural technologies for doing agriculture. These tools and technique were not harmful to the biodiversity and nature instead of that they follow sustainable practices. Their ways of doing agriculture was sustainable in nature. They also used green manures, cow dung, and medicinal plants as pest controlling. They used to do organic and green manures for cropping patterns in the past. .

The Nexus between International Agencies and Agricultural Markets

It has been already pointed out the nexus between International Multinational Corporations and agricultural markets. It is seen that there is linkages among the International; National and Regional level agencies to modernize the agricultural technologies, equipments, hybrid seeds, fertilizers and pesticides. Under the name of sustainable development, Multinational Corporation and International agencies like IFAD and others are introducing modern tools, technologies, High Yielding Varieties, Fertilizers and pesticides for getting more productions. The whole process has interventional linkages to national regional and local levels. Monsanto American Company BT Cotton patent has given to MHICO Company India. And latter has given patents regional companies like Nuzvidu, Ajeet Company, J.K. Company, Yashada Company. These regional companies given patent to Ajeet Company, Samarth Seed Company, Ganesh Seed Company, Santosh Seed Company, Balaji Seed Company and Maruti Seeds Companies in Kinwat, Mahur and Adilabad district of Telangana State. These tribal communities have association with the agricultural traders and agents of the adjoining Telangana district of Aliabad which is border district of the Kinwat. These companies are given seed to farmers for plantation in their field for germinations testing and preparation of hybrid seed. The Food and Agricultural Organization of the UN recognize and promote millets as a pathway for sustainable development, enhancement of biodiversity and transformer of agricultural food systems on the one hand and on the other hand, despite the empowering smallholder farmers, indigenous people and tribal those have possessed traditional and indigenous knowledge about indigenous varieties of the different seeds, traditional tools, techniques and methods of doing agriculture based on green manures and sustainable ways etc are not documented properly and not taken into considerations. Instead of this, their indigenous knowledge, wisdom and experiences were undermined and neglected to incorporate in the policy and planning. Thus, it is seen and observed that each and every agricultural development polices, outsider's views and modern technologies were imposed upon the tribal and

rural farmers under the name of advancements and modernizations of agriculture. Thus, the policy maker and planners had not understood socio-cultural and spiritual relationship between agriculture and tribal farming systems. These local tribal and rural communities worship agriculture in form of mother earth and Goddess. Thus, they developed many local deities in their natural setting and geographical locations. They developed their cultural festivals associated with the agricultural operations from land preparations to harvesting. Each and every agricultural operation has its own socio-cultural significance and these local farmers have their social cognizance. Still the old aged farmers have maintained and preserved indigenous varieties of different seeds, cropping patterns, ways methods, tools and implements for doing agriculture. But the young generations is losing due to the impacts of modernization and commercialization of agriculture. In most of the cases, youth and younger generation is not interested in agriculture, however, those who are doing agriculture are taking interest in the mono cropping, cash cropping and hybrid high yielding varieties. Thus, the private firms, the agents of the multi corporation's agencies and agricultural markets agencies proved training to the local farmers about the uses of hybrid seeds, high yielding varieties, fertilizers, pesticides and modern tools and agricultural implements. They are providing cash crops seeds.

It has been observed and seen in this region that due to the state agricultural policies, market intervention are replacing traditional agricultural systems of local tribal communities. It has been pointed out that local tribal farmers used to do agriculture in traditional ways; they mostly did agriculture for subsistence and livelihood. They were self sufficient and not depended upon the markets. They used to prepare their own tools, techniques and preserve indigenous seeds, varieties, green manures, such as, cow dung, medicinal plants and used as pest to control the crops by the attacks of diseases. But due to the modernization and commercialization of agriculture and under the name of development and empowering tribal farming by double incomes, modern tools, High Yielding Varieties, Chemicals and Fertilizers etc were provided to the tribal farmers for getting more production. Thus, modernizations, market sponsored polices brought out many changes in the traditional agricultural practices of the tribal communities. Still some old aged farmers have possessed cultural significance of the indigenous knowledge systems of the agricultures. In each and every agricultural operation, there are rituals and festivals, without rituals, they couldn't sow and harvest any crops. They developed their culture and civilization with the evolution of agricultural practices.

Empowering Tribal through Modern Agriculture

The attempt was made to modernize tribal people. Following colonial legacy, we also undermined the traditional and local/ indigenous knowledge, wisdoms, skills and experiences of the local tribal people. However, the local tribal communities adopted ways and modes of life in their natural settings. They accommodated with the nature and natural resources. They developed their own cultural, rituals and social and economical life styles in their own regional set ups. They used to do shifting cultivations, gathering forest resources and doing agriculture. They have rich knowledge of biodiversities, animal husbandries and local species. They also used local resources for their multiples uses. As result of this, they depended upon the forest, agriculture and local natural resources for their survivals and livelihoods. They worshiped forest, agriculture, hills, river, lands, animals and trees. The tribes were self sufficient and not rely on the markets. They did agriculture for subsistence and their livelihoods. They used to give priority to cultivate staple foods in their agriculture. They used multiple cropping patterns. They also possessed indigenous seeds, varieties and species. They used to cultivate multiple cropping patterns in their lands. They also used to green manures and indigenous medicinal plants as pest and fertilizers in their lands, as result of this, they preserve and protect the land fertility and sustainability of the agriculture. Thus, they have developed symbolic, organic, constructive and intimate relationship with the agriculture. Thus, they developed their rites, rituals, festivals and cultural activities around the agricultural operations. They not only used them but also they protect them. Because of they know the values of these resources in their socio-cultural and economical life. Thus, the patterns of human behaviors are emerged as organic, constructive and reciprocal between nature and culture in the tribal regions of this country. This is pointed out by many social scientists and policy makers in the earlier studies so far. But in the present context, the due to the intervention of the policy makers, planners, agricultural markets, western model of developments, hybrid varieties, High yielding varieties, use of fertilizers, pesticides and new modern technologies are replacing the old, traditional, indigenous techniques, tools, technologies and patterns of doing agriculture. Hence, the local tribal communities who possessed indigenous knowledge, tools and techniques are losing in the present context.

Modernization of Tribal Agriculture

In the present study setting, study observed and seen in the field that agricultural department began to provide tribal farmers inputs and technical know-how. Task

forces were dispatched through the workshops and demonstrations to the local farmers. Crop protection measures were provided to control the crop diseases. Banks, Co-operative societies were directed to provide loan to purchase eclectic motors, tractors, thrashers, pump sets, fertilizers, pesticides and hybrid seeds and agricultural implements. Small and big dams and canal and irrigation facilities were provided to the local tribal. Financially supported to the digging well in their lands. Minor irrigation was started to channelize the water facilities. Veterinary hospitals, care units and dispensaries were opened to improve the herd structure. Better qualities of animals were imported from other regions and state to this region. Artificial insemination was adopted as means to improve the quality of the animals. Horticultural department also provided financial support to the tribal farmers for orchards like *Mangoes chikus and sitaphals*.

Special Schemes for Tribal Agriculture

However, under the different nomenclatures, special attention was given to introduce agricultural development schemes for tribal farmers in the Maharashtra. Nanasaheb Desmukh Krasi Sanajivini scheme, Jalyukt Shivar Abhiya Yojana, The state also adopted public private partnership and developed linkages with the local NGOs and local tribal communities to implement agricultural development projects. The Integrated Tribal Development Department played important roles in providing all benefits of the governmental schemes to the local tribal communities. However, Governmental and Non-governmental or Multi National companies reached to the remote areas and provided modern Hybrid seeds, fertilizers, pesticides and modern agricultural tools and implements to the local tribal farmers. Maharashtra state government launched a spice cluster to improve the livelihoods of tribal families who are the beneficiaries of the forest right act, 2006 (FRA). This initiative was taken with the public private partnership with Jain Irrigation and Other NGOs in the different parts of the state in the Tribal areas in Tribal Sub-Plan (TSP). Under this scheme, tribal farmers are given training and marketing support to the tribal farmers. Various stakeholders such as, Government departments for agriculture, tribal development agencies and forest, horticulture and animal husbandry etc jointly are working for the cause of tribal farmers development is general and PVTGs tribes like Kolam is particular.

Traditional Agricultural Equipments

In early days, tribal used to do prepare instrument for digging lands such as,

Sticks, hoes, plough for cultivation the land for agriculture. They used specific wood of trees to prepare such instruments for agriculture cultivations. They have also maintained taboos to cut and fire certain trees. Those have medicinal values and use for agricultural purposes. They preserve the same species and they also worship them. Thus, they developed sacred trees and sacred groves in their localities. These tribal communities used pre-agricultural technologies. Most of them used to do practices of shifting cultivation or jhum cultivations. Gradually, due to the contact of non-tribal communities and developmental interventions brought out many changes in the life of tribal communities in India is general and Maharashtra is particular. However, one can find different types of methods, cropping patterns and indigenous tool and techniques of doing agriculture across the state and regions among the different tribal groups. However, rice, jowar, maize, chilies, vegetables and pluses were identified as the common crops in the tribal communities. As per their geographical and regional context, these people developed their methods and cropping patterns. Thus, their agricultural patterns are contextual and region-specific. But one thing was found common among them is that they used to do agriculture for subsistence and livelihood. They used to cultivate staple foods in their land on the priority basis. But, now it is seen paradigm shift from traditional method of doing agriculture to modern, mono cropping and commercialization the agriculture. As result of this, gradually, they are losing their culture, rituals, rites, local festivals which were attached with the arts skills and techniques of traditional agricultural operations. The local Kolam tribal farmers categorized lands into the following four types. As per land soil quality, they select cropping patterns. Jadhav, et al (2025) pointed out the traditional crop protection techniques of the Gond, Kolam and Pardhan tribes of Gondwana region in Maharashtra.

It has been pointed out in this region that the local tribal framers have very deep knowledge about the land qualities and as per their quality; they decided to take crops in that type of land. They classified the following four types of land in this region. 1) Chunkhadi land on which the farming is done but yields less harvest. This type of land is not so productive. 2) Kali land is considered as best productive land and ideal land for cultivation. 3) The Murmadi land is close to the hills and which yields less productions and 4) Gotali land farmer consider this land also not much suitable for farming. Thus, it is seen and observed that these tribal farmers as per land quality they chose to cultivate which types of crops in these lands.

Rituals Associated with the Agriculture

As we know that tribal has developed their culture with the agriculture. They have inter linkages with agricultural operations. In-depth Interviews and focus groups discussions were conducted in the selected tribal villages and study finds out the interlinkages and networks between the tribes and agriculture. As we know that tribes are nature worshippers, like the Kolam is also animistic and nature worshippers. They worship the nature, forest, trees, agriculture and animals. Thus, they have developed organic, constructive and very complex relationship with the agriculture. They developed their culture, ways of life, cropping patterns, rites and rituals based on the agricultural operations. Their whole socio-cultural, religious, economical life is rounded around the agricultural seasonal calendars. They have developed their own calendars. They worship local deities in the forms of nature, land, trees and water. They also offer crops to their deities. But in the present context, it has been pointed out that the old aged Kolam farmers are worried about the loss of their culture through impacts of outsider's forces such as, westernization, modernization, technology and developmental interventions. The modernization of agriculture is going to replace the old aged based traditional agricultural systems developed by the forefathers of the Kolam tribes. Since time immemorial, tribes have been living in the vicinity of the forest, hills and specific region. Hence, they developed their own way of life, survival strategies and livelihood patterns based on the locally available resources in this region. Thus on the basis of their past experiences, wisdoms and knowledge, they developed agricultural technologies, tools, methods, cropping patterns, organic fertilizers and pesticides. The old aged farmers narrated their past memories about the rituals associated with the agriculture and they also worried about the loss of their old culture. They are worried about the young generation which is not so serious about the preservation of the cultural heritage and indigenous knowledge systems based on the local resources. The formal education systems have not space for the inclusion of tribal culture and knowledge on the one hand and on the other hand, the modern agricultural policies are in favor of the multinational agricultural companies which are displacing the traditional and indigenous knowledge systems which were associated with the rites and rituals. This region has many local rites and rituals related with the agriculture. All these tribal farmers before the first rainy season, they gathered and offered seeds to the Rajoba God to get more production in the coming year. They worship Rajoba and they also offer Chicken and Goat to please the God. After the sowing, when the crops are

growing, the crops shouldn't attach by diseases or natural calamities, therefore, they collect water from the Ramkhandi place which is stream water place in the forest. They considered this water has capacity to protect diseases and control the crops by the attacks of diseases. Despite this practice, these farmers also used pest controlling method by using medicinal plants. It has been pointed out the patterns of ritual and worships to the local deities on the occasions of different agricultural operations. These tribal communities are offerings of food, liquor and sacrifices of goats and hens for a disease-free yield. However, there are some common practices are prevalent in the all five tribal communities in this region; however, some practices are varied across the tribes. Out of these five tribal communities, The Kolam is PVTGs, The kolam are very close to the nature they are mostly depended upon the forest resources. But now due to developmental policies and assimilative process, they are also integrating into the mainstream and other local tribal communities. Still, comparatively they are more backwards and under the bellow poverty lines. However, they are also linked under the FRA. Under this FRA, many kolams are given patta for cultivations. The Kolam farmers of the Jawarla, Pathoda, Kolamkhed and Ghogarwadi villages used to celebrate *Phuljhadani*, *Phanmodi*, *Bayabaki*, and *Metidiyam* festivals for getting good production from the agriculture. The kolam worship Bhimdev for getting good production in their lands. Other tribal farmers of this region also celebrated agricultural rituals. The Pardhan farmers of this region also celebrated agricultural festivals. They celebrated *Yakoti*, in the month of *Vaishak* and *Hareli* in *Ashad* month of year. The *Gonds* farmers celebrated *Presapen (badadev)* *Lingo* and *Jengodevi*, *Tadoba*, *Wagobha* and other local deities. Thus, all these tribal communities have prior ideas behind the ritual that if they did these practices then they will get good agricultural productions; protect their crops from the pest, natural disasters and calamities. Each and every agricultural activity was associated with the local festivals. These farmers also reported that some farmers in this regions that they grow certain species which have religious and rituals values for offering to their God and Goddess such as, traditional black sesame seed *til* only for deity worship purposes. Thus, they have significance values in their life. They also worship also the Mahuas, sal, tamarind, teak, apata and others. But, the days were gone now. Intervention of modern technologies, agricultural tools, and equipments is replacing the gender roles, socio-cultural practices and festivals and rituals. Worships of local deities and trees are disappearing in the present context. It is seen and observed in this region that Gond have different kinds of wood carving crafts

and Kolam have developed bamboo based craft. The Gond, Bhil and Andh farmers have very rich and indigenous knowledge about the different types of local varieties of crops, seeds, vegetables, medicinal plants, roots, trees and wood. They have also knowledge about the qualities of species and their uses varied uses. They also learnt techniques, skills and arts from their forefathers to prepare all types of agricultural implements for their own uses. But, due to the modern agricultural technology which are replacing old skills of preparing indigenous tools and techniques. It is seen that all old agricultural implements were replaced by the tractors and modern agricultural implements such as, harvesters, cultivators, loaders and thrasher. However, study found out some types of differences among the rites and ritual celebrations ways of Gond, Kolam, Pardhan Andh and Bhil are slightly different in this region, but the notions, intentions and objectives behind these festivals and activities are found common them. However, they also participated in their each other's festivals and rituals. In the case of Gond and Pardhan, we cannot find many differences. They have similar kind of life styles and way of doing culture and rituals. It is seen that the Gond was dominated tribe in this region; therefore, other tribes are following the Gond. However, these rituals are started from the beginning of land preparations and monsoon season and run up to the harvesting seasons. They used to celebrate all rituals and festivals with joys and enthusiasm. They also collectively celebrated. All family members used to participate in the all types of agricultural activities and all types of local festivals and rituals.

Losing Indigenous Crafts and Arts of making agricultural implements and tools

As we know that tribal are very expert in preparing various crafts and arts on the basis of local resources. It is seen in this region and it has been already pointed out that these people were not depended upon the markets for purchasing any seeds, fertilizers and agricultural implements in the past. They used to do prepare and make their own implements. They learnt techniques, skill and crafts from their forefathers. Therefore, they were not depended upon the outsiders and markets. Thus, they developed their own way of life based on the locally available resources in their natural settings. They prepared their own instruments, equipments, tools and required things for their survivals. Even though, they used to sell their products in the markets to other and outsiders. In this region, study comes to know that old aged farmers have knowledge about the making different types of agricultural

implements from the different types of the tree species. The old aged tribal farmers are very expert in preparing wooden agricultural implements such as *sickles*, *phawada*, *plough*, *tifan*, *dawara* and so on. However, the old aged Kolam men and women are expert in preparing bamboo based articles and useful tools for agriculture. The Bhil tribes are very expert to prepare hunting instruments and tools of collecting honey. Whereas tribal women belonging to these all five tribal communities preserve indigenous seeds and different kinds of local varieties of *jowars*, *chawali*, *rice*, *turs*, *mug*, *udits* and vegetables. Mostly, Bhil tribes keep goats and Gond and Kolam keep indigenous varieties of cows and ox. Andh and Pardhan keep also cows, ox and buffaloes. All these communities have some medicinal healers and vaidhus who have very deep and rich knowledge about the medicinal plants. However, usually all old aged farmers used to prepare indigenous pest to control the diseases on the crops by using local medicines or plants. These tribal farmers used to prepare green manures and indigenous pest controlling by using local materials. They used Cow urine, cow dung and jaggery is mixed and used as crop growth promoter in the fields. Garlic, Chilli, cow urine, cow dung mixture was considered as very good manures for getting more production. These farmers developed their own subsistence farming systems in their locations. Even today, they gave priority to cultivate staple foods in their land. Then they gave second priority to cash and market crops. However, they are following multi cropping patterns, mono cropping and cash cropping patterns in the present context. It was also observed in this region that tribal women did the practices of kitchen gardens and they grow mostly vegetables in their gardens. They use cow dung in their kitchen gardens making the soil more fertile. It was also told that these tribes don't hire the labourers for tilling, weeding, harvesting crops and other agricultural operation in the seasons. But they asked their fellow beings and relatives to help on a reciprocal basis, when they needed. Thus, they have reciprocal relationship. Even they also go in the forest for gathering and hunting in collectively. Thus, they have collective feelings. They co-operated each other in their needs. Thus, Kinship organization and system plays very great and significant roles in the life of tribal communities. It is seen that these tribes use the plough and bullocks, sickle, paddy straw, ropes, leaves, branches of certain trees, ash, cow dung, basketries, etc in the farming. The plough is either made of wood from the *sal* tree and axes and spades are used to clean the fields. Cow dung is used abundantly to increase the fertility of the soil. The cow dung is first decomposed – a process that takes from two to three years and then scattered over the fields. All the

crops are cut with the sickle but before that crop, meats and liquor is offered to the goddess for protection of the crops. The harvested crops are carried with the help of a stick made from the bamboo, sal or teak tree to the *where* the farmers separate the paddy from the straw with the help of bullocks. Both male and female were actively engaged in the agricultural operations in the past. But, now it seems that the modern technology shifted the tribal women roles in agricultural production. It is seen that the multinational companies prepared all new agricultural tools in favor of the men not in women. New modern technology is male oriented not women. All tractors, thrashers and other machines were driven by the men tribes. Tribal women have not any space in the modern technology.

It has been told by many old aged and middle aged farmers of this region that the modern cropping patterns is not suitable in this region, the local farmers have not emotional and religious attachment with the new and hybrid cash cropping varieties. They used to cultivate particular types of oil seeds, vegetables, local varieties of dhan/ rice, jowars, cereals in the pas and they had their attachment with them and ritual values. But due to loss of these patterns, we are also losing out values and rituals attached with them. They also used to offer the same production to their local deities, God and Goddess. Due to the replacements of these old one crop productions, they are losing to offer new hybrid crops to the local deities. Otherwise, the youngest generations is also losing their traditions attached with old agricultural systems.

In early days, the local tribal farmers collectively doing shifting agriculture and they helped each other in their needs. They collectively did agricultural works and tribal women actively participated in the agricultural operations, festivals, harvesting, weeding, cultivating and threshing. But, now the modern technology replaced the role of gender, collectivity of the local farmers in the agricultural operations. New Technology, tractors, threshers and plough and cultivators replaced human labour and relationship patterns in the agriculture. In the present context, the Kolam farmers are in dualism and trace of facing agricultural crisis between the traditional and modernity.

Case-1: Kolam Farmer's Dualism

Sunil is middle aged kolam farmer of the Jawarla village. Jawarla is the tribal village in which have Gond and Kolam tribal communities. This tribal village was adopted by the Governmental agencies as model tribal village for development. Hence, more focus was given to implement all governmental policies in this village. As result of

this, all governmental departments actively supported to the tribes of this village. This village has group Gram Panchyats which comprises main village which is called Jawarla, and other two Kolam pods Palsidag and Kazipod are also part of this main village. Kolams are also identified as Particularly Vulnerable Tribal Groups (PVTGs). Kolam being PVTGs have special attentions and packages for development. It is also reflected in the field observation that more focus was given to the welfare and development of Kolam tribe. Under the Forest Right Act, 2006, Sunil received patta of five acres of the land. Before that his father used to do shifting cultivation. Now there is ban on the shifting cultivation. Sunil used traditional agricultural technology and implements in his land. He learnt this technique from his father. He also used to cultivate indigenous seeds in his land. But, in the present context, he is using all modern agricultural technology, implements and hybrid seeds, fertilizers and pesticides in his land. Under the name of modernization and agricultural development, he is provided hybrid seeds, high yielding varieties of different seeds *of cotton tur, chilli, jowars and, chwali*. Agricultural department supported him all these seeds in free of cost at the initial stage. He is being member of PVTGs got benefit from the all governmental schemes from the different governmental departments such as, Integrated Tribal Development, Horticulture, Agriculture, Animal Husbandry, Gram Panchyat and Panchyat Samiti. He got agricultural implements, new threshers, electric motors and pump sets. Multinational corporations, Krashi Kendra and local agents also provided fertilizers, pesticides and hybrid seeds to the tribal communities free of costs at the beginning. But later on, they charges costs to their implements, hybrid seeds, fertilizers and pesticides. Due course of time, he become depended upon the agricultural markets and private supportive agencies for purchasing inputs. Now, he is so worried about the increased input costs of hybrid seeds, fertilizers, seeds and pesticides. On the other hand, meanwhile, he lost his to preserve indigenous seeds, local varieties and skills of preparing agricultural tools and implements. Thus, it is not story of Sunil alone, this kind of experiences of all kinds of tribal farmers in this region. Like, Sunil other many tribal farmers are trapped in the vicious cycle of agricultural markets. Now they are depending upon the modern tools, hybrid seeds, chemicals and fertilizers for agriculture.

Case-2: Worried about losing arts of making agricultural implements

Lakshman is sixty five years an old aged Kolam farmer of the Pathoda village. He has three sons. He has ten acres of land. He and his all family members did work in the

agriculture. Being Kolam PVTGs tribal farmers, he got tractors from the Integrated Tribal Development office. He got tractor on the fifty percent of subsidies. His elder son, Kesav is twelfth pass. He was given training of driving tractors. He not only ploughs his own land with the help of tractor but, he is providing his services to the other farmers of this region on the rent basis. He has different modern agricultural implements for preparing of land, sowing and harvesting crops. However, Lakshman's son is adopted modern technology of agriculture and he is losing all types of knowledge of the pre-modern agricultural technologies which is possessed his father and forefather. However, Lakshman is the last generation who has traditional knowledge about the different types of agricultural implements, seeds and varieties. He has learnt all wisdoms and knowledge from his forefathers. But, now his son Kesav is losing to preserve old aged indigenous knowledge systems of the agriculture based on the wisdoms and experiences of their forefathers. lakshman has very deep and rich knowledge about the preparations of wooden craft of making different required agricultural implement such as *wakar*, *tifan*, *phawda*, *kolpe*, *ju* and *nangar*. He has knowledge to use specific wood for preparing specific tools. But the youngest generations like Kesav are using modern agricultural technologies. He told us that forest department has banned to cut trees for making traditional wooden agricultural implement for cultivation and instead of the governmental agencies providing us alternative modern technologies. But he is so worried about the loss of values, arts and skill attached with the wooden crafts of his community. The tribal farmers have developed intimate relationship with the valuable trees. They not only protected these trees but also worship them. Thus, Lakshman has very wide knowledge about the land types, quality of the land, green manures and pest controlling methods. He also preserves indigenous seeds of *jowar*, *rice*, *mug*, *udit*, *tur*, *chawali* and *chilli*. He used to do practice of multi cropping in his land. He used to do agriculture of subsistence and not for market. He used to give first priority to cultivation of staple food in his land. He was not depended upon the markets, but now his son Kesav is doing modern agriculture and using modern technology, hybrid seeds, fertilizers and pesticides. His agriculture is totally depended upon the markets.

Discussion

In the setting of this region, study pointed out issues of the loss of indigenous knowledge systems of the local tribal communities in the present context in

general and Kolam is particular. As it was discussed in earlier discussion that the local tribal communities like Gond, Pardhan, Bhil and Andh are in general and Kolam is particular have developed their own agricultural seasonal calendars in their ecological set up. They have their own season wise calendars based on their traditional wisdoms, experiences and knowledge. It is seen and pointed out that these local tribal communities have used their age-old indigenous wisdom and developed their own indigenous agricultural systems based on their past experiences. By using available local resources, they developed their own indigenous ways, agricultural implements, crop protection techniques and cropping patterns. They passed this old aged knowledge to the next generation. They learnt this heritage from their forefathers. This system has also based on their experience, wisdoms and knowledge. These practices are also associated with their way of life, local festivals, rituals and culture. Mostly, it has been noted that in the past, these local farmers used to cultivate as per their needs and requirement. On the priority basis, they used to cultivate staple foods. They did agriculture for subsistence and livelihoods. Thus, they also celebrate each and every agricultural operation with rites, rituals, festivals and joys. They have developed different notions, ideas and views about the agriculture. Hence they considered land as mother earth. They worship land in the form of Goddess. They were not depended upon the markets and they had not adopted commercial approach for taking mono crops and cash crops in their land. They also used indigenous varieties of seeds. They also used indigenous methods of crop protections and tool for cultivation, fertilizing, harvesting and threshing. Therefore, they preserve, conserve and protected indigenous knowledge of doing agriculture.

But in the process of modernizing agriculture, new agricultural technologies, tools, fertilizers, pesticides are introduced and motivated for the use of them for getting more production under the name of development. As result of this, old aged traditional agricultural systems was threatened and adversely affected. Under the name of modernization of agriculture, many sachems and polices were imposed on the local farmers. Without understanding the need, requirements, capacity of the tribal farmers, they imposed on them to complete their targets. It was seen in the Palsaidag, Kazipod, and Jawrla village that many agricultural implements were dumped without their uses in these Kolam pods. These farmers have not knowledge how to use turdal machines, and other thrashers. The flaws side of this policy is to universalize farmers, irrespective of their size of land holding, irrigation pattern,

ignoring farmer's capacity on adoption of new methods of agriculture. Over these years, agriculture development programmes are gradually being counterproductive to farmers development in form of more capital and technology intensive, enhance peasant dependence on formal banking and informal micro financial and private agencies, for financial support, undermining of indigenous knowledge on farming, raising high dependency on market on every item of agricultural input like seeds, fertilizer, pesticides, agricultural machinery, loss of farmers self-reliance and autonomy, accelerating depesantisation, raising indebtedness resulting massive suicide, etc.

It has been seen that many agricultural development policy prescriptions, number of agricultural legislative measures has also been enacted to protect the interest of farmers, improve economic condition, curb exploitation, remove unhealthy impediment to the progress of the agrarian sector. By mid-sixties with the initiation Green Revolution, Indian agricultural legislating era absolutely altered. It is now covering input management related to fertilizer, seed, pests and pesticides, genetically modified organisms (GMOS), agricultural biotechnology, labours laws, agricultural marketing, agriculture credit and finance, co-operative sectors and the Panchayat etc. Despite the fact, hardly any legislation is implemented for the best interest of farmers and the farmers are getting benefits from the same. Now the tribal farmers were trapped in the market cycles of the agriculture. Now they become agents of the traders and money lenders of the middle man. They are providing modern tools, hybrid seeds, high yielding varieties fertilizers and pesticides in advance and charging double amount after harvesting.

Conclusion

It is concluded that in each and every steps of modernization and commercialization of agriculture, tribes are losing their own indigenous and traditional ways of doing agriculture. Under the influence of agricultural markets, surrounding commodity money economy and production in the agriculture sector is increasingly gaining commodity character. State sponsored policies are promoting to the smart agriculture based on the uses of high yielding technology, hybrid seeds, fertilizers, chemicals' and pesticides for getting more profits and productions to become empower the tribal farmers. However, in the context of this, study found out the ground realities that under the name of development, tribal farmers are using all modern tools, technologies in agriculture for getting more incomes. But in reality study found out

the ground realities from these five villages in which the tribal farmers are spending more amounts on the inputs in the season. They took loan from the money lenders and agents or agricultural traders from the Taluka headquarters. It has been pointed out that this has become chain between the agricultural markets and local tribal farmers. In each every season, these agricultural traders gave all inputs in advance to the tribal farmers such as, hybrid seeds, fertilizers, pesticides. And after harvesting season, they have to repay to the traders with interest rate. On the one side they are losing their indigenous knowledge, skills and techniques of doing agriculture and on the other side, they are losing their culture, rites, rituals and festivals which were associated with the agricultural operations. 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 for doing agriculture based on the local resources. Thus, the modernization of agriculture is not losing only their traditional arts, skills and knowledge but also losing collectivity, social relationship and culture also.

Acknowledgement

We are very thankful to the ICSSR, New Delhi which has provided financial supports to work on the cultural heritage and Indigenous Knowledge System of the Kolam tribe in Maharashtra.

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