Application of Indigenous Knowledge in Forest Conservation and Management: An Anthropological Study in Madia Gonds of Dhanora Tehsil of Maharashtra

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ABSTRACT: Indigenous knowledge of tribes is local knowledge generated in ecosystems as, important in the use and conservation of plants and trees. Since ancient times they have been using various parts of trees and plants such as roots, herbs, bark, leaves, flowers and fruits for food, medicine, aesthetics, domestic, and livelihood purposes. The governance system of the tribal society has been playing a major role in the management of forest resources. They share their knowledge with their members. Indigenous knowledge in the conservation and management of forest resources of Madia Gond-dominated villages of Dhanora Tehsil in Gadchiroli District of Maharashtra State has been studied. The study has been conducted in villages covered throughout the forest environment. Anthropological tools such as schedules, Interviews, Observation and Participant Rural Appraisal, etc. were applied to to understand the rule of local knowledge systems in processing environmental resources. An attempt has been made in this paper to focus on the use of indigenous knowledge in the conservation and management of natural resources by Madia Gond towards sustainable development.

INTRODUCTION

Indigenous knowledge is a cumulative body of knowledge and wisdom, which is generated, and transmitted in the communities over time. It is handed down through generations by cultural transmission in the interactions and relationship with one another and their environment, to cope with their own agroecological and socio-economic environments (Gadgil *et al*., 1993). Indigenous knowledge may often contribute to the conservation and enhancement of biodiversity (Ibid). According to Fernandez (1994), Indigenous knowledge is unique knowledge confined to a particular culture or society. Indigenous knowledge system signifies local knowledge in association with practices, institutions and innovation in a specific culture and environment (Berkes, 2009). Today the conservation and management of world biodiversity is very important. Several traditional methods of conservation of biodiversity and natural

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resources are available in India since ancient times. It is dynamic as a result of both internal and external influences. When studying indigenous knowledge systems, it is important to examine communication methods, decision-making processes, thinking processes and holistic approaches to knowledge (Berkes *et al.*, 2006). Anthropologists seek to gain a deeper understanding of indigenous knowledge by living with indigenous communities. Contemporary anthropological ideas and approaches are important in 'forest conservation and management' from an anthropological perspective, which is effective in homogeneous small groups and micro-level fields.

'Forest resource conservation and management' is a decision-making process with people's participation, popular democracy and people responsiveness under decentralized governance. It is an institutional mechanism with significant stakeholder roles, rights and responsibilities for the conservation of biodiversities and livelihood securities of the main primary beneficiaries (Arora, 2010). Since the early 1990s, several new approaches towards forest management, which include the active participation of local communities, have been tried out in many tropical regions. As a result of these efforts, there has been increased recognition of the various ways in which many local communities are already actively managing their forest resources (Bhattacharya *et al.*, 2010). The planning of development interventions to stimulate more efficient community involvement in forest management can often be based on such indigenous forest management systems. Hence, in the present day, it is said that forest management is a strategy and decision-making process within cohesive national policies under various conventions and principles of international environmental governance (Salim and Ullsten, 1999). It means the protection of forest resources as well as efforts to save or preserve them, which is possible only through collective work. According to Whitmore (1999), Sustainable forest management may be the only viable option for sustaining forests for biodiversity conservation. Indigenous communities may be best suited for the conservation and management of forests as they depend upon the resources of the forests, and therefore, have a clear incentive to manage the forest sustainably (Ascher, 1995). Due to the inter-relationship between tribal culture and nature, the ecology of tribal areas is protected to the largest extent, which is described as a symbiotic relationship. Most of the 'indigenous cultures' are still striving for saving their traditional conservation ethos following cultural practices to protect and conserve bio-diversity (Whitmore, 1999). Sometimes, most individual societies have been assessing to degrade 'indigenous knowledge' as useless and irrelevant. But it is unwise to underestimate the importance of traditional knowledge systems (Gadgil and Berkes, 1991). Environmental change can be prevented by the Indigenous knowledge of the tribes. Conservation of forests is necessary for future generations, for its sustainability, by protecting, planting, preserving and conserving their surrounding eco-system, especially forest areas and tree lands nearby (Nakashima and Roués, 2002). Several ecosystems in the forest produce natural resources such as clean water, timber, recreation and wildlife. With the increasing demands of society on forest resources day by day, the size of the forest area is also depleting gradually. From hoary past forest dwellers have different prolonged management practices than state management regimes. These changes set the stage for innovative management and conservation options.

Objective of the paper: Keeping in view the above perspective the present study makes a humble attempt to study the indigenous knowledge system of Madia Gond in forest conservation and management practices and identify its key factors.

MATERIALS & METHODS

This research is pertaining to Social Science. Hence it intends to explore human culture and practices in various natural and human ecosystems. Following up the recent trend of Anthropology, this has adopted the participatory approach. It involves both participant observation and observant participation. In this action, anthropologists are directly involved in the attitudinal change of the community under study. Steps are given below to apply various anthropological tools and techniques adopted in the study:

Site selection: The study focused on the Madia Gonds of Dhanora tehsil of Gadchiroli district of

Vidarbha region under the state of Maharashtra, where the constitutional categories are predominantly living. Gadchiroli district has a geographical area of 14,412 km² of which 10,094 (70%) km² is dense forest. Dhanora tehsil of the eastern part of Gadchiroli district is completely covered with forests. The main feature of the selection of Dhanora tehsil is that the area is completely covered with forest and the presence of the Madia tribe is high. Madia Gonds are conserving trees and plants in the studied area with their local knowledge.

Tools and technique: The present study is purely qualitative by nature and basically focuses on in-depth intricacies in the Man-Nature Relationship. Various techniques such as Sampling, Panel Interviews, Focus Group discussion (FGD) and Participatory Rural Appraisal (PRA) tools have been used in the study.

Village selection sampling: The villages have been selected on the basis of purposive sampling. The names of the selected villages are Medha, Lekha, Kanhartola, Heti, Tukum, Markegaon, Irpunji, Kharkadi and Todemasahat. The selected village is completely covered with forest and is a Madia Gond-dominated village.

SOCIAL DEMOGRAPHY OF STUDY AREA

The total population of selected villages is 2637, out of that, the Scheduled Tribe population is 2294 (87%) and Scheduled Caste is 343 (13%). In Medha, Kanhartola, Markegaon, Irpunji and Kharkadi villages, 100 percent and in Lekha village, 92 percent of the population belong to Scheduled Tribes. Over 85 percent of the population in Todemsahat village and over 65 percent of the population of Heti and Tukum villages belong to the Scheduled Tribes (Census of India, 2011). Among the Scheduled Tribes, mainly 'Madia Gonds' reside in selected villages. Pradhan, Kuvar, Madgi, Marar, Janjad, Madi and Diwar communities are found in some villages.

The total population of the selected nine villages of Madia Gond is 2278, belonging to 508 families. The maximum number of families in Madia Gond are in Medha (106), followed by Lekha (92), Heti (80), Tukum (65), Kharkadi (54) and Marakeganv (43) villages. There are 17 Madia Gond families living in Irpunji village, 24 in Todemsahat village and 27 in Kanhartola village. The Sex Ratio of Madia Gond is 953 in the selected villages, of which the Sex ratio of Madia Gond in Tukum village is 919, 924 in Kharkadi and 937 in Marakeganv villages. The Sex Ratio in Heti village is 971, 970 in Todemsahat, 968 in Lekha and 963 in Medha villages. More than seventy percent of families of every studied village depend on the minor forest produce except Kanhartola village (Table-1).

TABLE 1

Demography of Madia Gond in selected villages

Selection of villages	Block/ Tehsil	Family	Male	Female	Total population	Sex-ratio	Occupation Dependenceon minor forest produce	BPL (%)
Medha	Dhanora	106	241 (51%)	232 (49%)	473	963	81.13%	98%
Kanhartola	Dhanora	27	62 (52%)	59 (48%)	121	952	66.6%	89%
Lekha	Dhanora	92	188(51 %)	182 (49 %)	370	968	83.69%	92%
Heti	Dhanora	80	209 (51%)	203 (49%)	412	971	85%	95%
Tukum	Dhanora	65	111 (52%)	102 (48 %)	213	919	86.15%	94%
Marakeganv	Dhanora	43	96 (52%)	90 (48 %)	186	937	79.06%	89%
Irapunji	Dhanora	17	47 (52%)	45 (48%)	92	957	76.47%	90%
Kharkadi	Dhanora	54	145 (52%)	134 (48 %)	279	924	77.77%	86%
Todemasahat	Dhanora	24	67 (51%)	65 (49%)	132	970	75%	85%
Total		508	1166(51%)	1112(49 %)	2278	953		

Source: Primary data

Occupational Pattern and Economic Condition

The families of Madia Gond are mainly dependent on minor forest produce collection and agriculture. Eighty-two percent of the families are dependent on minor forest produce collection, followed by Agricultural Work and Minor Forest Produce (Sixteen

percent). Nearly two percent of households work as forest labour on wages and 0.3 percent on jobs.

TABLE 2

Occupation-wise family details of Madia Gond

Livelihood	Names of villages									Total Family
	Medha	Lekha	Kanhartola	Heti	Tukum	Irapunji	Kharkadi	Marakeganv	Todemasahat	
Agricultural work and minor forest produce	18	12	9	9	8	4	11	9	6	86 (16%)
Minor forest produce	86	77	18	68	56	13	42	34	18	412 (82%)
Forest labour	2	2	–	2	1	–	1	–	–	8 (1.7%)
Job	–	1	–	1	–	–	–	–	–	2 (0.3%)
Total	106	92	27	80	65	17	54	43	24	508 (100%)

Source: Primary data

The main source of income of Madia Gond is minor forest produce, agriculture work and forest labour. Most of the family's income (Eighty-seven percent) is less than six thousand (annual). The income of eleven percent of families is within six thousand to ten thousand and the income of two percent of families is above ten thousand (Table-3).

TABLE 3

Family income of Madia Gond tribe

Annual income in Rupees	Names of villages									Total Family
	Medha	*Lekha*	*Kanhartola*	*Heti*	*Tukum*	*Irapunji*	Kharkadi	Marakeganv	Todemasahat	
less than ₹6000	92	84	24	72	54	15	48	36	6	445 (87%)
₹6000 to ₹10,000	13	6	3	6	10	2	5	7	18	56 (11%)
₹10,000 to ₹15,000	1	2	-	1	1	-	1	-	-	6 (1.9%)
₹>15000 above	-	-	-	1	-	-	-	-	-	1 (0.1%)
Total	106	92	27	80	65	17	54	43	24	508 (100%)

Source: Primary data

RESULTS & DISCUSSION

Village Governance

In the village governance adopting forest conservation measures is taken unanimously in the Gram Sabha, Mahila Mandal, Abhyas Group and Forest Protection Committee. The governance system found in the villages of Maria Gond has been playing an important role in the conservation and management of forest resources, in which the inclusion of consultation works of the village council is found along with indigenous activities. Madia Gond strongly believes that no outside aid can help a community if the village itself is not willing and united. They firmly believe that the decision-making process can be effective only when a decision-making system is in place. Uninformed decisions can be irresponsible and dangerous. Hence regular informal discussions are a way of life in the villages of Madia Gond. As youth prepare to take over from their experienced elders, the practice group (continuing learning) joins them. No government scheme related to natural resources can be implemented without the consultation and permission of the village council. In these circumstances, the people of the selected villages have followed strict rules in association with each other.

Decision-Making Process

> Relevant issues related to the conservation and Management of Forest is discussed openly and transparently in the village.

> A clear and unanimous informal understanding develops before taking any decision.

> Decisions undertake only after reaching a consensus.

> Interference with outsiders is not allowed in the decisions of the village council under any circumstances.

Major Achievements

The achievement of villages in the last few years include:

> A proper and equitable management system for the forests around the village has been established,

which are legally under the jurisdiction of the state government.

> Everyone has followed the rules relating to the conservation and management of forests after constantly communicating.

> Deserving candidates based on their achievements have been selected in the administrative unit of a group of villages.

> Livelihood options for the villagers throughout the year have been ensured.

Gram Sabha

At any time, in any circumstances, they solve the problem of the village by holding a meeting of the Gram Sabha. Their thoughts are displayed on the walls of the Gram Sabhas of the study area, which make their village aware.

"Our government in Delhi - Mumbai – We are the government in our village"

Fig. 1: Thoughts written on the wall of Gram Sabha

Madia wants to convey the message that we have a government in Delhi and Mumbai that belongs to all and rules according to its rules and regulations. Similarly, we are the government in our village. We have our own collective decisions, customary rules and regulations that we have been following.

In nine villages of the study area, forest-related works are done by the instructions of the headman (chief) and all must follow his orders. The decision of the chief is considered a collective decision. Some of the collective decisions relating to the management and conservation of forests are as follows:

- No fire shall be set into the forest in any manner.
- In forests where trees are comparatively less, trees will be planted there.
- There will be no encroachment on the forest.
- No animal or small game in the forest will be hunted unnecessarily.
- Only a limited quantity of minor forest produce will be brought from the forest.
- Living trees of the forest or their branches will not be cut.

Fig. 2: Madia Gond taking collective decision related to forest

CONSERVATION AND MANAGEMENT

Seeds Conservation

To preserve healthy seeds (Tendu, Sitaphal, Mahua, Mango, etc.) which are identified by the water test method, that identifies healthy and potential seeds, by dropping seeds at the bottom of the vessel filled with water, then if these floats, these are considered good. After testing, the seeds are preserved by drying them in the sun for three to four days.

After testing, the seeds are dried in the sun. The selected seeds are mixed with straw and filled in the pitcher. To protect the seeds from moisture, the mouth of the pitcher is closed with the help of wet soil by placing a *Parat* (lid of the pitcher) on it. While preserving the paddy seed in the pitcher, dry neem leaves are added to the paddy seed. The seeds of trees and plants are preserved also in small bamboo (*Tuhri*) or a dry gourd.

Gram Sabhas of nine villages have preserved more than 300 seeds in the 'Seed Bank', which include Mahua (*Madhuca longifolia*) and Neem (*Azadirachta indica)* in medicinal trees; Fruit trees include mango (*Mangifera indica*), tamarind *(Tamarindus indica)*, Kaitha *(Limoniaacidissima)*, Tendu *(Diospyros*

melanoxylon), Sitaphal *(Annona squamosa)*; And shade trees include Peepal (*Ficus religiosa*), Banyan *(Ficus benghalensis)* seeds.

Plantation

Madia Gonds prepare Nurseries of seedlings from preserved seeds and then seedlings prepared in the nursery are planted in vacant places of the forest or places with sparse trees and plants. Nursery is prepared on the banks of a pond or river or well. They preserve seeds in the seed bank, which includes those of medicinal plants, fuel, fruit and shade trees. The collections of seeds of Mahua (*Madhuca longifolia*), Mango (*Mangifera indica*), Tamarind *(Tamarindus indica),* Peepal (*Ficus religiosa*), Banyan *(Ficus benghalensis),* Kaitha *(Limoniaacidissima),* Tendu *(Diospyros melanoxylon),* Sitaphal *(Annona squamosa),* Neem *(Azadirachta indica)* are considerably high.

Madia has produced a variety of plants in his nursery and planted them according to the suitable soil in the forest (Fig. 3). Trees and plants like Mahua (*Madhuca longifolia*), Mango (*Mangifera indica*), Peepal (*Ficus religiosa*), Kaitha (*Feronia limonia*) and Bamboo (Bambusa), etc. are found in the nursery. Several types of Mahua and Mango (Sweet and less sweet types of plants) are prepared in the nursery. Similarly, sour Kaitha and sour-sweet types of tamarind are also planted. In the case of Banyan or Peepal, tall and dwarf types of plants are available in the nursery.

Fig. 3: Plants Nursery

Katranji (large or Giant Thorny bamboo) Bamboo (*Bambusa bambos*), *Manga* (medium-sized solid bamboo) Bamboo (*Oxytenanthera/ Dendrocalamus stocksii*) and *Varel* (small) Bamboo (*Bambusa nutans*) are grown in nurseries and planted in the forest. From the point of view of Madia Gond, sour mango is planted better in *Karial Todi* (black soil) and sweet mango in *Raggal Todi* (red clay soil). *Kamk Todi* (yellow soil) is considered suitable for the plantation of sour and sweet Kaitha and *Kuded Todi* (brown soil) is suitable for sour Kaitha. Tendus that grow in brown sandy soil are sweeter.

The Forest Protection Committee and Mahila Mandal identify the vacant places in the forest for plantation and present their reports to the Gram Sabha before the onset of the monsoon. As per the report, on the orders of the chiefs, the new sapling is planted from the nursery in the suitable soil of the forest. While taking out the plant from the nursery, the root is covered with soil. Behind doing this, they believe that if the sun's rays fall on the root, then the tree will be small in length. To plant saplings in the vacant places of the forest, pits are dug with an iron saber (Fig. 4).

Fig. 4: Madia Gond preparing to plant new saplings

They believe that by planting the plant deeper, the roots will hold the ground more firmly. Due to the

depth of the pit, plenty of rainwater will be available to the roots, due to which the plant will grow quickly. Villagers visit the forests frequently to monitor the plants, and water is given to the newly planted plant and watch its growth. If the plant is drying up, then a long thin pit near the plant is made and it is filled with water so that the plant gets water from the moisture of the soil.

Seventeen trees like Baheda (*Terminalia bellirica*), Mohua (*Madhuca longifolia*), Harra (*Terminalia chebula*), Jamun (*Syzygium cumini),* Shisham *(Dalbergia sissoo),* Tulsi (Ocimum tenuiflorum), Tamarind (Hitta) *(Tamarindus indica),* Neem (*Azadirachta indica*), Banyan *(Ficus benghalensis),* etc have been identified by the Gram Sabha whose number is very less in the forests. These plants prepared in the nursery and planted in the forest, are protected by them. Due to the low number of Baheda, Jamun, Tamarind, Banyan and Amla (*Emblica officinalis)* trees in the forest, the plantation of these trees is done by the Gram Sabha. Shikakai *(Acacia concinna),* Ingoriyo*(Balanitis aegyptiaca),* Bel *(Aegle marmelos),* Ber *(Ziziphus mauritiana),* Asan *(Terminalia elliptica),* Acacia*(Acacia ampliceps Maslin),* Semal *(Bombax ceiba),* Kosum *(Schleicheraoleosa),* Sitaphal *(Annona squamosa),* Palas (*Butea monosperma*), Karanj *(Millettia pinnata)* etc. are identified by the village councils and pay special attention to ensure that their numbers do not decrease. The fruits, flowers, leaves and bark of these plants have special medicinal properties. For example, shikakai fruit is used to prevent hair fall. Special attention is given to ensure that the number of trees like Shikakai, Ber, Babool *(Vachellia nilotica),* Palas, Amaltas *(Cassia fistula)* and Gular *(Ficus racemosa),* etc. does not reduce in the forest.

Bamboo Management

Bamboo is used more in building houses, making fences around the house, making baskets and making fishing nets. Bamboo rhizomes are grown in the nursery and then rhizomes are planted in other places in the forests. Mainly eight species of Bamboo are found in the forests of the study area, viz. Katranji Bamboo (*Bambusa Bambos*), Varel Bamboo (*Bambusa nutans*) and Manave Bamboo (*Dendrocalamus strictus*). Balkua (*Bambusa balcooa*), Badruya (*Dendrocalamus brandisii*), Tulda Bamboo (*Bambusa tulda*), Akoua Bamboo (*Dendrocalamus asper*) and Manga Bamboo (*Oxytenanthera/ Dendrocalamus stocksii)* are available in abundance in the forests, Instead of planting of the rhizomes of these species, they are protected. In case of drying up of bamboo, pits are made to stop the rainwater at those places. A pit three feet long, one foot wide and six inches deep are dug to allow rainwater to reach the roots (Fig. 5).

Fig. 5: Digging a pit for the re-growth of Bamboo

From the utility point of view, the Katranji, Varel and Manwe bamboo are used in making baskets and fishing nets. They believe that it takes four years for Katranji Bamboo, three years for Manave Bamboo, and two and a half years for Varel Bamboo to get ready. Varel Bamboo is the thinnest and most flexible, baskets are mostly made from these bamboos.

Immortelle (Cuscuta Reflexa) Management

To save trees and plants from the Immortelle (Fig. 6), the Immortelle is cut and separated from the trees. The cut immortelle is burnt or buried in a deep pit in the ground. They believe that if any of its rays come in contact with the moisture of the ground, it will come alive and spread again in the trees, and hinder the growth of the trees and plants.

Fig. 6: Immortelle (*Cuscuta reflexa*)

Protection of Plants from Pests and Diseases

Ripe fruits or green leaves of neem *(Azadirachta indica)* are used to protect plants from pests and diseases. The ripe fruits or green leaves of neem are first ground with water in Lodha and Silota. Then it is mixed with animal urine (cow, buffalo or goat) and sprinkled on trees and plants. It is sprayed at an interval of three days. It is believed that after two weeks the pest and disease will be eradicated from the leaves of the plants. To protect the trees from termites, the trunk of the tree is cleaned the termite heaps with water. Then neem leaves are ground with water and applied in a thick paste on the trunk of the tree. The amount of neem leaf depends on the size of the termite-infested areas of the tree.

Soil Erosion Management

Most of the trees and plants have been planted in *Raggal Todi* soil. Madia Gonds are more familiar with trees suitably good soil and mixing soil for specific purposes. They believe that paddy grows more in 'black soil' (*Kariyal Todi)* and black soil is also suitable for planting green vegetables. Putting 'yellow soil' (*Kamka Todi*) in the root of fruit-bearing trees makes the tree for being grown quickly and '*Chikla Todi*' (wet soil of the pond) in the roots of a drying tree in order to turn the trees green again. Madia believes that planting trees in suitable soil reduces soil erosion, so before planting trees, they test the suitability of the soil. For example, *Khadak Todi* (dark red colored) soil for Amla and *Mih Todi* (smooth pebble-free) soil for gooseberry is considered the most suitable.

To reduce soil erosion, trees and plants are planted by the Gram sabhas. Jamun trees are planted on the shiny sandy soil (*Midach Todi*), Ber and Jackfruit on *Uske Todi* (brown sandy soil), Baheda on *Kadka Todi* (reddish granular soil), and Tanarind on *Dvral Todi* (greyish-white soil). Bamboo on *Khadak Tod*i (dark red soil), Awla (Phyllanthus emblica) on *Ded Todi* (brown colored) soil, and Bamboo on *Mih Todi* (smooth pebble-free soil) are considered the most suitable.

Three types of Wadi (*Kopli, Mewari* and *Toh Wadi*/wall) are made to prevent soil erosion by tree roots. *Kopli Wadi* is made of mud and bamboo, *Mewdi Wadi* is made of grass and mud and *Toh Wadi* is made of small stones. They believe that the root of the tree becomes very weak due to the soil being cut from the roots in excessive rains. Due to the weakness of the root, the trees fall on the ground when there is a strong wind. That's why it is necessary to make Wadis (walls) around the trees. Soil is put into the roots of the tree. Some holes are also made in the Wadi to let the water out. The height of the Wadi is kept up to the top of the tree root.

Grass Conservation

According to the rules of the Gram Sabha, it is necessary to change the pasture every fifteen days. Due to the grazing of animals at the same place, the grass does not get ready quickly due to the animals eating the leaves from the root. Due to the presence of large grass in the pastures, the upper part of the grass is eaten by the animals, and the grass of the pasture is prepared again in a few days. It is believed that by grazing animals in the same pasture, the animals eat the grass up to the roots, due to which the grass will not be ready soon.

To increase milk in animals (cow and buffalo), *Padar* grass *(Apludamutica)* and *Jaweda Jadi* grass *(Echinochloa crus-galli)* are most commonly used as animal feed. *Javeda Jadi* and *Padar* grass are used as animal fodder due to their long leaves. *Bodalkhar* grass *(Chrysopogon zizanioides)* is used in stomachache and sorbet of *Gabat* grass *(Bothriochloa)* is used as medicine for sunstroke.

Red granular soil (*Kadka Todi*) for *Kasurkatta* grass, shiny sandy soil (*Midach Todi*) for *Padar* grass, and brown soil (*Kudel Todi*) for *Nulka* grass are considered suitable. *Bodal khar* grass is found in yellow soil (*Kamka Todi*) and *Gabat* grass in red granular soil (*Kadka Todi*).

Fire Management

The risk of 'fire' is high due to the abundance of bamboo in the forest. Bamboo clumps are spaced to protect the forest from fire, and mature bamboos are the first to be cut. Apart from this, inflammable dry leaves of trees are first stored and mixed with cow dung to make tubers (Upla). Dry leaves are used to dry the cattle shed in the rainy season. Dung is mixed with these leaves to make agricultural manure, which is used during agriculture.

They believe that due to the heating of the upper part of the mountain or mound by the sun, the fire spreads rapidly toward the height. When a forest fire occurs, the spread of fire is prevented by wetting the area around the forest. According to the decision of the Gram Sabha, smoking beedi and lighting fire are strictly prohibited in the forest. Those caught lighting a fire are punished by grazing out the cattle of the village for a week. If the rule is broken again, this period is tripled as punishment, that is, for three weeks one has to work as a cattle C*harak* of the village.

CONCLUSION

The study is focused on the application of indigenous knowledge and local governance towards forest conservation among the Madia Gonds of Maharashtra, through village governance, seed conservation, tree plantation and soil conservation, which play an important role in the protection of trees and plants of the forest. It has been observed that In the village governance, decisions on forest problems and issues of forest management are taken for adopting forest conservation unanimously in the Gram Sabha, Mahila Mandal, Abhyas Group and Forest Protection Committee. Forest management works are done under the supervision of formal local committees. The villagers firmly believe that the decision-making process can be effective only when a decision-making system is effectively placed.

The study is based on the indigenous knowledge of the Madia Gond tribe, which includes a knowledge system as well as indigenous technology sustainably used for forest conservation and management. Saplings are prepared in nurseries from the seeds of trees and plants from the forest and are planted in vacant places in the forest. To protect trees and plants from insects and termites, ground neem fruit or leaves mixed with animal urine are applied or sprinkled on the trunk of trees and plants. The role of women is important in tree-planting methods. Their ecological knowledge of seeds, crops and plant species is in-depth. From the selection of seeds to taking care of trees and plants, the work is mainly done by women and youth groups. The study is not just a documentation but a collection of internal knowledge system associated with the social ethos practices of the tribes.

The application of the anthropological perspective is effective in homogeneous small groups and micro-level fields. Anthropologists seek to gain a deeper understanding of indigenous knowledge by living with indigenous communities. Because of that contemporary anthropological ideas and approaches are important in 'forest conservation and management'. Ecological anthropology, which studies the relationship between humans and their environment, was founded by Julian Steward in the mid-twentieth century. 'Cultural ecology' is a heuristic theory for understanding the impact of the environment on culture. 'Ecological anthropologists' focus on how cultural practices maintain a balance in the relationship between a local group and its environmental resources.

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