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Research Article

Perception of Tribal Communities on Indigenous Technical Knowledge (ITKs)

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ABSTRACT

Indigenous Technical knowledge is the traditional methods or processes through which the culture is transmitted from generation to generation. They are called as ITKs wherein the scientific reasons are explored and the usage of them are gaining momentum. These ITKs have potential in various fields viz., in Agriculture, Medicine and Veterinary. This manuscript is to study the perception of the tribal people on these ITKs and scope for expansion on the commercial side as a livelihood option. The study focuses on the Western Ghats, one of the important Biodiversity hotspot in the Tamil Nadu. The perception towards ITKs among the tribals was studied with four groups of the Nilgiris namely Todas, Irulas, Kurumbas and the Kothars. Perception is the perceived opinion of the tribals towards the ITKs, which is one of the important criteria for conservation among the people. Since the ITKs and their conservation is mainly meant for the livelihood of the tribals the social relevance study is found important. The perception was studied under the support on livelihood and improvement in socio economic development. Majority of the tribal people revealed that the ITKs and their conservation supported their livelihood for more than 60% and developed their socio economic living to 73%. The statements also evidenced that the tribals feel ITKs to be conserved and it is the need of the hour.

Keywords: *Indigenous Technical Knowledge (ITK), Conservation, Biodiversity, Perception, Tribals*

INTRODUCTION

Indigenous technical knowledge is the local traditional knowledge that people have gained through inheritance in the form of creativity, innovation and skill. The term Indigeous Technical Knowledge is used as "Local Knowledge" and "Traditional Knowledge" interchangeably. It is the dynamic knowledge or body of wisdom of the local people Brahmi (2004). The trials are especially having a set of trained practices of this ITK which helps them in their day to day life.

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ITK refers to knowledge about the local environment by the people and the communities Mara (2017). The basic characteristics of ITKs provide for conservation and efficient utilization of resources by being ecofriendly, less capital intensive, cost effective and efficient by products (Warren, 1991). Of late the policy makers and the researchers started recognising the value and importance of these ITKs in the day to day life of the rural and the trial communities paving way for sustainable livelihood (Sandhiya, 2019). In order to make the fullest use of this traditional wisdom, proper scientific applications are required in documenting, validating and application of ITKs. Agriculture Knowledge Information System (AKIS) and documentation of ITKs through IPR is such initiatives in this side. Anonymous (1998) identified the special features of ITKs and explained the blending of the traditional and the scientific knowledge. This multi prolonged comprehensive approach should be added with the social component of the people wherein the perception study is the basic approach to identify the role of the tribal people on applying and conserving ITKs.

Review of Literature

Tribes and ITK conservation

ITKs with various tribal groups and their way of living, crop cultivation method of tribes has been discussed to reveal the natural living of them in accordance with the Environment for Practicing and conserving the ITKs.

Irular (Tribe of Tamil Nadu)

Ravishankar (1994) conducted a study on role of tribal communities in the conservation of plant genetic resources and documented his findings. Irular (Tamil, *Irul* means black or darkness). The attribution of the name Irular, to these tribal people may be either due to the darkness of their skin or the thick jungle in which they live. They are also called as *Villians* (bowmen). Irulars depend on plant kingdom for their day to day living, by collecting edible tubers (yams) namely 'irularkhizanghu' (*Dioscorea opoositifoliai*) and 'vallikhizanqhu' (*Dioscorea pentaphylla*). These tubers are repeatedly washed and cooked before consumption. They also possess good knowledge in the identification and skill in snake catching. They also have knowledge of herbal medicine used as antidote for snake bite. For example leaves of *Andrographis paniculata* and *Vernonia anthelmintica*, tubers of *Corallocarpus epigaeus*, roots of *Rauvolfia tetraphylla* and the bark of *Cassia fistula* to treat the snake bites. These plants are used either individually or collectively.

Kothar (Tribe of Tamil Nadu)

Ravishankar (1994) has given the characters of Kothars that they are named after their settlement in Kothagiri of The Nilgiris. They are renowned people of the Kothagiri region and denoted agriculture as their main occupation. Though their nature of crop production and cropping pattern has been drastically changing in the recent years, they still depend on agriculture as their main occupation. They go for the cultivation of vegetables, tea and plantation crops. They conserve the traditional varieties of minor millets like Varagu, Samai and Thenai. These crops are still their important food crops.

Paniya (Tribe of Kerala)

Anil Kumar (1995) reported that Paniyan means one who works in the field, and they were supposed to be work for others mainly the non-tribes. This group is the dominant tribals in the State. About 72 per cent of the total Paniya population of the State are found in Wayanaddistrict. He added that they worship trees, banyan tree (*Ficus bengalensis*) is important for them. They will not cut such trees and believe if any one attempts, for that, they face serious problems or fall sick. They consume wild roots, edible and medicinal herbs, fish, prawns, crabs which are usually found in the wilderness.

Kurichia (Tribe of Kerala)

Anil Kumar (1995) reported that *Kurichias* are the "high class" people among the hill tribes, occupying the highest social and economic position among them. They are basically Agriculturists having their own lands. They preserve their habitats in almost pristine

conditions even now and conserved many of the traditional varieties of different crops.

Malayali (Tribe of Tamil Nadu)

Ravishankar and Selvam (1996) reported about Malayali tribes that Malayali tribes were hill dwellers, hill people, inhabitants of the hills or rulers of the hills.

Perception on Nature, Environment and ITKs

This was actually observed in almost all the villages visited during the data collection. Past studies by Marimuthu (2001) revealed that the clients could see the advantages of the traditional crops.This result was inline with the discussion of Bhuvaneshwari (2005). The perception of the tribals towards Use of Indigenous Knowledge by the Rurar women was narrated in Nigeria (Wole, 2009). Biodiversity conservation was designed and implemented in a two stage methodology as in situ conservation and ex situ conservation of Agro biodiversity (Fernandaz, 2006). The same has been generalised and application concept in all the Agro climatic zones was explained by CinthiaFernandaz., et al (2013). Organic Sustainable agriculture is best possible only through the intervention of the Indigenous Technical knowledge (Bodapati, 2013). Agriculture of The Nilgiris is characterized by high degree of ITK. It has various traditional cultivars, which not only have significance in terms of agriculture, but also have socio-cultural importance.The introduction of tea and other cash crops and slow decline in the traditional crops such as minor millets and the disappearances of certain land races have bearings on the ITK of The Nilgiris.

MATERIALS AND METHODS

The research techniques and procedures adopted in the study and presented under the following sub-heads.

1. Locale of research
2. Research design
3. Techniques of data collection
4. Statistical tools used

1. Locale of research

Tamil Nadu is one of the major states of the Southern Zone in India which consists of important tribal groups. The selection of district, taluk and villages are presented along with the description of study area.

2. Research Design

a. Selection of district

The Nilgiris is one of the "Biodiversity Hotspots" as declared by the National Biodiversity Authority in the year 1998. The green carpet of crops and natural settings always speaks about the various biodiversity of the district provides ample scope for the study. According to Census (2011) the percentage of tribal population was highest in The Nilgiris district than other districts of Tamil Nadu.

b. Selection of respondents

Four tribal groups *viz*., Thodas, Irulas, Kurumbas and Kothars were selected for the study. The Nilgiris District comprised of four blocks. *viz.,* Udhagamandalam, Coonoor, Kothagiri and Gudalur. The Irulars and Kothars were found mostly in Kothagiri block, the Todas in Udhagamandalam and Kurumbas in Gudalur block was selected. Thirty tribal people were selected for each group and hence the population for the study was 120.

Table 1: Selection of respondents

Village	No. of respondents
Kothar (Pudukothagiri)	30
Irular (Kunjapanai)	30
Todas (Pagalkod)	30
Kurumbas (Erumadu)	30
Total	120

c. Description of the study area

The Nilgiris district has many attractions of its own known as "The Queen of hill stations." The Nilgiris district is situated at an elevation of 900 to 2636 meters above MSL. The name "Nilgiris" means blue hills (*Neelam*-blue and *giri*-hill or mountain). This district marks the western extremity of Tamil Nadu situated in the middle of the western border of Tamil Nadu. Its boundaries are the Coimbatore district in the east and the Kerala state in the south and in the west, and the Karnataka state and Erode district of Tamil Nadu in the north. The area of The Nilgiris district is 2,549 sq.km.The wide range of climatic conditions as well as the peculiar topographic features provides a variety of conditions and combinations of temperature, moisture regime, which are faithfully reflected in the diversity of its vegetational communities. The climate is temperate to sub-tropical.

3. Techniques of data collection

Interview schedule

Taking into consideration the scope and objectives of the study a comprehensive interview schedule was prepared. The pre testing of the interview schedule was done with the respondents selected from non-sampling area. Refinement was made in the schedule after pretesting as found necessary and it was finalised. Precaution was taken to ensure that the items were clear, concise, complete, comprehensive, and unambiguous.

Case studies and Group meetings

Case study was an empirical inquiry that investigated a contemporary phenomenon within its real life context. It was a method of comprehensive study of a social unit, which may be a person, a family, a group, an institution, an organization or a community. Meetings may itself be used as a complete method of investigation or may be used in early exploratory stages of research or supplemented in other research evidences to add depth to them.

4. Statistical tools used

The data gathered were quantified and tabulated for statistical analysis. Percentage analysis was used in descriptive analysis for making simple comparisons for calculating percentages. The frequency of the particular cell was multiplied by 100 and divided by the total number of respondents pertaining to particular cell. Percentages were corrected to two decimal places.

RESULTS AND DISCUSSION

Perception on ITK conservation practices

Perception was operationalised for the present study as the expressed opinion of the respondents about ITKs and the conservation practices. The scoring procedure developed by Ganesan (1989) and Modified by Cinthia Fernandaz (2006) was suitably modified for the study. The perception was studied by the means of five selected statements. These statements were arrived at by means of discussion with farmers, farm women, field level extension workers, officials and NGOs. The details of the scoring and other related information are presented below.

Perception on ITK conservation

The ITK conservation practices that are followed in the field condition were classified and the opinion of the respondents on this type of conservation was measured by assigning the score of 3, 2, and 1 and analysed with the following statements.

Table 2: Levels of Perception

S.No	Aspects	Level of perception
1.	Conservation of seeds of traditional crops	Easy/somewhat easy/difficult
2.	Cultivation of traditional crops	Easy/somewhat easy/difficult
3.	Livelihood sustainability through *ITK* conservation	Fully supported/somewhat supported/least supported
4.	Improvement in standard of living	Best improved/somewhat improved/least improved
5.	Government policies	Fully supported/somewhat supported/least supported

Perception about ITK conservation practices

Perception was considered as a prerequisite to get an overall understanding of what the tribal women feel about ITK conservation and thereby increase the participation in ITK conservation. Hence five dimensions were identified upon which the respondent's opinion was gathered.

Perception on *ITK* conservation

Conservation of seeds of traditional crops

Perception of the respondents towards ITK conservation was measured with the following statements and the responses were collected in three point continuum. The results are presented in the Table 3.

Table 3: Conservation of seeds of traditional crops

n=120

S.No	Conservation of seeds	Kothars	Irulars	Todas	Kurumba	Total	%
1.	Easy	13	12	17	18	60	50
2.	Somewhat easy	7	12	10	9	38	32
3.	Difficult	10	6	3	3	22	18
						120	100

Maintenance of seeds of traditional crops in the field condition was an important conservation measure. Nearly fifty per cent of the tribals revealed that it was easy to maintain seeds of traditional crops, whereas 32.00 per cent of them opined that it was somewhat easy and 23.00 per cent of them said that it was difficult to maintain the seeds of traditional crops. When there was crop rotation in the field the traditional seeds had to be secured for further use and rotation.

Traditional crop cultivation

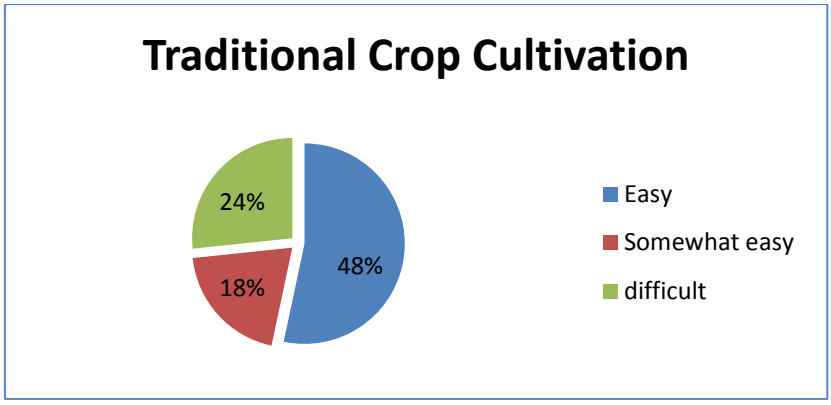
The opinions expressed by the study groups on the traditional crop cultivation were obtained and presented in Table 4.

Table 4: Traditional crop cultivation

n=120

S.No	Cultivation of Traditional Crops	Kothars	Irulars	Todas	Kurumba	Total	%
1.	Easy	17	12	12	16	57	48
2.	Somewhat easy	3	5	7	6	21	18
3.	Difficult	10	13	11	8	42	24
						120	100

Apart from seed security the cultivation of the traditional crops also played a vital role in the ITK and its conservation. Nearly half of the tribals revealed that the cultivation of traditional crops were easy, only one- fourth of the respondents said that it was somewhat easy and difficult. When the respondents were interested in the security of traditional seeds it ultimately helped the respondents for cultivation of traditional crops.



The field experiences also revealed that the tribal women were more interested in the cultivation of traditional crops rather that the scientific varieties. If proper guidance was provided along with marketing facility it would be a boon for their livelihood.

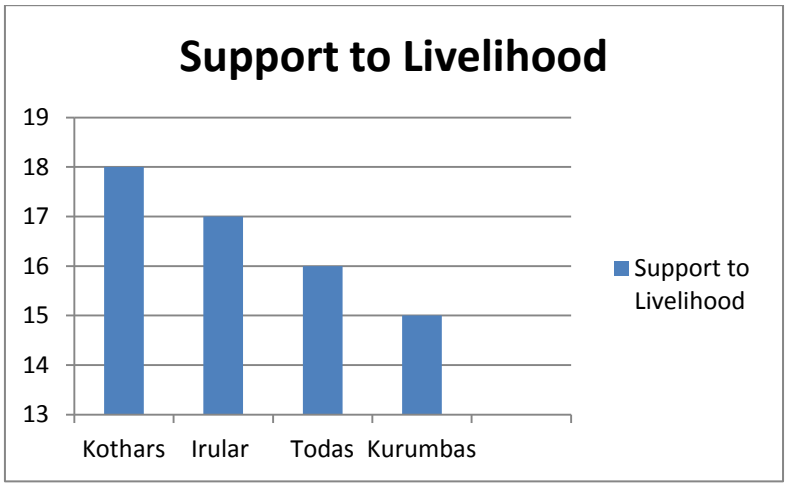
Livelihood sustainability through ITK conservation: ITK conservation provided the livelihood sustainability through various avenues of employment and income generating avocations. How far it supported them was analysed. Two-third (60.00%) of the tribals perceived that ***ITK*** conservation fully supported their livelihood. Their basic needs were fully met by the nature.

Table 5: Livelihood sustainability through *ITK* conservation

n=120

S.No	Livelihood sustainability	Kothars	Irulars	Todas	Kurumbas	Total	%
1.	Fully supported	18	17	16	15	67	56
2.	Somewhat supported	8	7	5	8	28	23
3.	Least support	4	6	9	7	26	21
					Total	120	100

The clients system which actually faced the hardships and constraints while deriving the benefits from the ITK conservation through the set procedures expressed the existence of support for livelihood sustainability.



Improvement in standard of living

As a result of the ITK conservation over a period of time, the tribalssould have accrued benefits. Hence it was tested whether the respondents could acquire the benefits due to theirITK conservation practices. The data are presented in Table.6

Table 6: Improvement in standard of living

n=120

S.No	Livelihood sustainability	Kothars	Irulars	Todas	Kurumbas	Total	%
1.	Best improved	20	18	22	21	81	67
2.	Somewhat improved	7	8	8	5	28	23
3.	Least improved	3	4	0	4	11	9
					Total	120	100

To what extent the standard of living had been improved and how it had been perceived by the respondents was the theme of this analysis. Majority tribals perceived that there was best improvement in their standard of living. Nearly one-fourth of them perceived that there was some what improvement.

But on an average all the respondents accepted that the farmers could acquire the benefits due to ITK conservation. It could be inferred that the respondents could not reap the fullest benefits out of the ITK conservation practices. Formal steps could be taken to increase the benefits for the respondents.

Government policy for ITK conservation

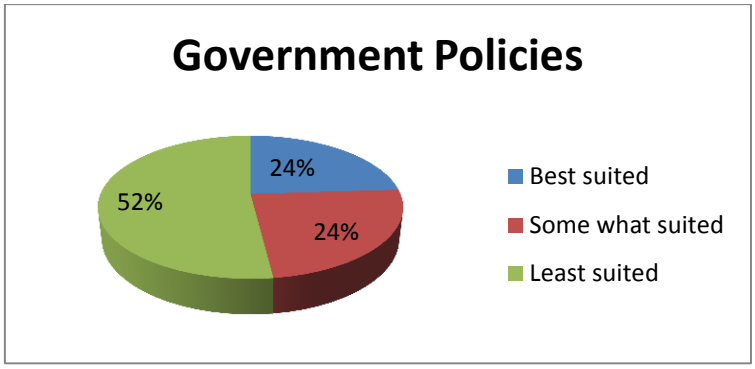
Keeping abreast of the latest know-how in the ITK conservation was a prerequisite to cope up with the requirements of present day scientific agriculture. To know, how best the tribals replenished their knowledge due to the Government policies were analysed.

Table 7: Government policy for ITK conservation

n=120

S.No	Livelihood sustainability	Kothars	Irulars	Todas	Kurumbas	Total	%
1.	Best suited	10	7	5	7	29	24
2.	Somewhat suited	8	10	6	5	29	24
3.	Least suited	12	13	19	18	62	52
						120	100

Government policies were important for any development and participation of the respondents. If the policy measures were taken so keenly it would ultimately help the individuals to develop. The perception of the respondents on the government policies was given in the Table 7. Only one-fourth of both the group had mentioned that the government policies best supported the conservation.



The joint forest management was one best project which provided support for the conservation of ITK. The benefits that tribals could attain from such projects would motivate them towards ITK conservation.

V. Summary and Conclusion

Majority of the tribals revealed that it was easy to conserve the seed banks in the field and it was difficult to cultivate the seeds of traditional crops. They also opined that the cultivation of traditional crops were easy, only one- fourth of the respondents said that it was somewhat easy and difficult. Majority tribals perceived that ITK conservation fully supported their livelihood and somewhat supported their livelihood. Majority tribals perceived that there was best improvement in their standard of living. Nearly half of the tribals perceived that the government policies somewhat supported ITK conservation. Only one-third of both the group had mentioned that the government policies best supported the conservation. Government intervention for supporting the conservation practices provided a way for the people to participate in the conservation practices in a livelier manner. This gave an understanding of the ITK conservation practices of varied nature to the respondents, which was largely needed to evoke their participation in the conservation practices.

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