



SUSTAINABLE UTILIZATION OF BIORESOURCES AND CULTURAL ASPECTS OF KANI TRIBES IN KANYAKUMARI DISTRICT, TAMIL NADU, INDIA.

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Article Info

Received 29/08/2015

Revised 16/09/2015

Accepted 19/10/2015

Keywords :-

Kani tribals,
Bioresources, Cultural activities,
Ethnomedicine,
Indigenous Knowledge,
Western Ghats.

ABSTRACT

Bioresources include all products and services emanating from natural environment that satisfies the needs and wants of humans. The survival of mankind depends upon the availability of bioresources and their proper management. The present study enumerates the cultural aspects and sustainable utilization of bioresources of Kanikaran tribes in Kanyakumari District, Tamil Nadu, India. The study area of Kanyakumari districts consists of 52 kani settlements. The settlements are periodically visited from January 2015 to September 2015. In each visit the data are collected by informal interview, about Socio-cultural aspect and sustainable utilization of bio-resources used for their ultimate life. The study found that these people are highly dependent on the bio-resources for their livelihood even in this age of scientific and technological development.

INTRODUCTION

There are estimated to be over 500 million tribal or indigenous peoples residing in over seventy countries whose social, political, economic and cultural orders predate the modern nation state[1]. These peoples also possess diverse knowledge systems and various types of knowledge and applications to include knowledge in relation to food and agriculture, biological and other materials, medicine and medical treatment, design, literature, music and other artistic manifestations. Indigenous knowledge systems and associated knowledge are diverse, as are the nomenclature. Traditional resource management systems are considered as unbiased system and often ensure equitable sharing of benefits from forests and other natural resources[2, 3]. India is bestowed with

rich reserve of bioresources and forests are one among them. For generations these forests have been managed by the indigenous communities for enhancing the productivity and maintaining their integrity. Human practice of setting aside areas for the conservation of bioresources can be seen in several examples of sacred groves, royal hunting forests and sacred gardens [4]. These practices involve a variety of restraints on harvesting in term of quantity, locality, season and age, sex and social class [5]. Norms are set up for the use of these resources by community institutions. These institutions regulate the use and preservation of bioresources like forests through decentralized community control system [6]. In all, prudent use of the resource was practiced which served as a common good for the communities who in turn shared common interest and understanding towards the sustainable use of the resource. With this background the present study is framed to enumerate the local knowledge of tribal communities on sustainable utilization and management of bioresources, cultural habitats and ethno botanical wisdoms of Kani tribals of Kanyakumari districts.

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STUDY AREA

There are 427 tribal communities in India and the state of Tamilnadu has Scheduled Tribes. Traditional medicines were known as the "Age of green medicine". The different ethnic groups settled throughout this place have their own way of life. Kani or Kanikkaran is one of the tribal communities live in Kanyakumari district of Tamil Nadu. The district lies between 77° 15' and 77° 36' of the eastern longitudes and 8° 03' and 8° 35' of the northern latitudes. The District is bound by Tirunelveli District on the North and East, by South East Gulf of Mannar by South and the South West the boundaries are the Indian Ocean and the Arabian Sea by West and North West is bounded by Kerala. The rich forests of this district form the catchment area for more than 7 rivers and 9 dams, and form the back-bone of the irrigation network and provide drinking water for Kanyakumari, Tirunelveli and Thoothukudi districts in south Tamil Nadu. The ethnomedicinal information was gathered from the indigenous people of the study area called Kani or Kanikaran, one of the oldest groups of the branch of ethnic people in South India. Kanikars are the only endemic tribal community settled in the hilly tracks of Kanyakumari District in Tamil Nadu.

METHODOLOGY

Collection of Data on Traditional Botanical Knowledge

The word "Kanikaran" means hereditary proprietor of the land. They comprise 927 families and more than 4228 people distributed in 52 settlements. In kanyakumari the kani tribals inhabited the villages of Veli pilam, Kolanchi madam, Maanga malai, Mudavan pottai, Thachan malai, Kalapparai, Mara malai, Thotta malai, Yettam kundru, Vila malai, Valaiyem thooki, Aandi pottaimalai, Koruva kuzhi, Manali kadu, Koduthurai malai, Mookarai kal, Puraiidam malai, Perum kurvi, Mallam muthangkarai, Aarukani, Vatta parai, Purathi malai, Phenu, Vellarakku malai, Thalaku malai, Kattu va, Patthu kani, Sirukadathu kani, Oru nooram vayal, Thonadi, Mela mannadi, Kela mannadi, Anaimugam, Pulimootu kalai, Vayakkarai, Kallarai vayal, Koovaikadu malai, Vellambi malai, Puravalai, Aalam paarai, Valiye malai, Padu paarai, Silam kundru, Villusari malai, Kayal karai, Muhaliyedi, Vetta malai, Ambadi shan, Keeraparai, Vekkali moodu, Kaduva vetti, Killi konam, Puravalai.

In the present study, Kani Tribals Botanical Knowledge (KTBK) was collected by informal interviews to the elder persons (Major zones of Veli pilam, Kolanchi madam, Aarukani, Pura valai, Thiruparappu falls Vellambi malai) between the age group of 50 and 90. The local name of the plants, uses, useful parts, Cultural activities and indigenous technological knowledge were recorded. The frequent field trips were made to the study area from January 2015 to September 2015.

DATA COLLECTION

The field research will include a variety of qualitative research tools such as structured and semi-

structured interviews with key people from the local Panchayat leaders, local healers, community members and Forest Department officials.

The interviews will have two sections: one structured and the other semi-structured. The first one will be composed of to obtain data on knowledge and use of the plant resources applying the free list method, and the second one to collect and document data on social cultural religious environment and economic arrangements, and to gauge local knowledge and opinions of each tribal community.

In addition, unstructured interviews about social role by gender, perceptions, preferences, and collection and preparation, modes of useful plants, folk taxonomy, ethno classification, methods of transmission of knowledge, will be performed.

RESULTS AND DISCUSSION

Tribal Botanical Knowledge (TBK) is a divine gift to humanity. Tribals, even today, depend on wild plants and animal for their livelihood. Since the prehistoric time man has always dependant up on plants for his food, shelter and health. Therefore, the relationship between man and plants is as old as history of humanity and indigenous knowledge about the plants is as old as human civilization.

Living in harmony with nature has been an integral part of Indian culture. This has been abundantly reflected in a variety of traditional practices, religious beliefs, rituals, folklore, arts and crafts, and in the daily lives of the Indian people from time immemorial. The present day global concerns for sustainable development and conservation of natural resources spanning the two decades between the Stockholm Conference of Environment in 1992 and the United Nations Conference on Human Environment and Development (Earth Summit) at Rio de Janeiro in 1992 are of recent origin in comparison to the long tradition and cultural ethos of nature conservation in India. In the present study the life style and sustainable utilization of bioresources of major kani tribals settlements (Figure. 1) were documented.

Tribals are primarily a semi-romantic community and one of the primitive people who settled in Mothira malai. They have been originated from Kerala. They have slowly shifted to Tamil Nadu and have been settled in the forest of Kanyakumari region. Kani tribals live in religious practices of ancient traditional system and harmony with nature and the eco-system. They live in bamboo huts, mainly derived their food from forest product and still maintain the hunting-gather instincts. They follow animistic religion.

Kani's settlement is typically a cluster of few families living interspersed with the forest, isolated from any public transports facility. Tribals are comprised of largely illiterates, 90% of them cannot read and write. They speak Malayalam mixed Tamil. The Government of Tamil Nadu has recognized them as Schedule Tribes (ST) in Kanyakumari district. Nowadays, they also buy food in

the “Public Distribution system” for home needs. They sell the cultivated products to the common men with the permission of the Forest Department, for their livelihood.

They are extremely hard working and can survive without the help of modern agricultural implements. They cultivate edible food plants like jack fruits, citrus, pepper, banana, coconut, betel and greens (Figure. 2). They are socio-economically very poor and still most of them are forest workers. They are also engaged in seasonal collection of honey and some other forest products (Figure. 3).

Socio-cultural Life of the Tribals

Normally the primitive tribes express the cultural identity through their custom, tradition, festivals, dress and ornaments. All these play a key role in maintaining law, youth dormitory, worship and enchanting, economic policy, collection of food, hunting, shifting agriculture, and handicraft and so on for their lively subsistence. Indeed all these things are a case study of cultural history of tribes for the new generation of writer. Affection towards villagers is also taken into consideration for selection as head.

Ceremony of Tribals

Ceremonies are inseparable part of the way of life of tribals. There are two types of ceremony so far as the observation at family level and community level is concerned. The family level ceremonies mainly include new born babies, marriage and death. These ceremonies have specific custom and convention, for instance the naming ceremony of the new born baby which is taken place on 21st day after birth. There is also provision of prayer and worship to the forefather for blessings.

Culture Associated with Religion

All tribes are the worshipper of nature as they felt the presence of divinity in nature. Indeed, this is important from religious ground. They give more emphasis on three elements of nature. They worship the soil as mother earth, sun as religious god and water as the life giver. But the head decides the observation of different festivals on considering the religious culture. So it is noticed that there is some uniformity and diversity of observing festivals. The aim and objective of religious objects are as follow: (a) prayer for blessing (b) system of improved bread earning (c) worshipping and remembering of forefathers

(d) welfare of world (e) recreation (f) environment Protection and (g) integration among communities. The religious practices go on in tribal culture all over the year, e.g. construction of home, shifting cultivation, sowing of seeds, setting of wooden pole in the ground, hunting and worshipping. These practices are the main perspectives that keep alive the religious culture till now.

Song, Dance and Festivals

Other aspects that associate with tribal culture are folk song, folk dance (Kokarakko), fairs and festivals which cannot be ignored or side-tracked. They play traditional tribal musical instruments such as Kokkarai, drum, horn, Dungdunga etc. The expression of the parts of the body like eye, head, waist and hand attract others and especially at the time of dance which is parallel to the tune of musical instruments (Figure 4.).

Bio-resources as food and ethnomedicine

Other than the traditional food items of modern man, like the rice, wheat, millets, etc they have a treasure house of knowledge about potential food plants from the surrounding forests. These includes leaves, stems, bark, roots, fruits of wild plants and a number of animals and insects gathered as food items. The area is very rich in various types of edible and non-edible items found abundantly in the nearby jungles. Nature has provided plenty of edible plants from which leaves, roots, fruits, flowers, seeds, tuber, etc. are taken as food. They collect those edible plants for their own consumption and other uses. If there is any excess quantity of collected materials, they sell those in the market or exchange with some other essential items of daily needs. Nimachow *et al.*, [7] reported that the linkages of ethnomedicinal plants and bioresources on livelihood of Adi tribes of Arunachal Pradesh. The various edible vegetables collected from the forests are Elavangam bark (*Cinnamomum wightii* Meissn), Vengaiyam bulb (*Allium cepa* L.), Peradai stem (*Cissus quadrangularis* L.), Kovai root (*Coccinia ternatea* L.) locally known as Tatar are seasonally collected and many more edible plants which are available but scientifically not known. They also eat number of fruits that are collected from the forest such as Vilvam fruit (*Aegle marmelos* L.), Elumichai fruit (*Citrus limon* L.), Sangupushapam fruit (*Clitoria ternatea* L.) etc (Table 1.).

Table 1: List of commonly used traditional medicinal plants of Kanikaran tribes in Kanyakumari District, Tamil Nadu, India.

S. No	Botanical Name	Family Name	Local Name	Useful part	Mode of preparation and Ethnomedicinal uses
1	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Vilvam	Fruit	Fruit pulp powder (20g) orally given with hot water daily to asthma, Leaves smoke inhaled to reduce asthma pain
2	<i>Aerva lanata</i> (L.) A.Juss ex Schult.	Amaranthaceae	Siru poolai	Leaf	Leaf dissolved in water at over night, It is filtered and from this 100 ml orally given in case

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3	<i>Allium cepa</i> L.	Liliaceae	Vengaiyam	Bulb	Bulb extract (20-30 ml) is orally given to treat patient suffering from asthma.
4	<i>Anona squamosa</i> L.	Anonaceae	Annachi	Seed	Take the seed powder (10g) orally given with hot water to induce abortion.
5	<i>Barleria prionitis</i> L.	Acanthaceae	Rose-Mullu gida	Leaf	Take 40-50ml of leaf juice orally given to cure urinary irritation.
6	<i>Bauhinia purpurea</i> L.	Caeselpiniaceae	Manthari	Bark	Take the bark powder is made in to paste with Castor oil and applied externally for bone fracture
7	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Mudakathan	Leaf	Smoke inhaled in leaf to reduce asthma pain.
8	<i>Cardiospermum canescens</i> Wa	Sapindaceae	Mudakathan	Leaf	Take 50-100 ml leaf extract is given orally in rheumatic pain.
9	<i>Cinnamomum wightii</i> Meissn	Lauraceae	Elavangam	Bark	Take 100 ml of decoction bark is given orally for expectorant.
10	<i>Cissus quadrangularis</i> L.	Vitaceae	Perandai	Stem	Paste of stem is orally given daily after food to regularize menstruation.
11	<i>Citrus limon</i> (L.) Burm	Rutaceae	Elumichai	Fruit	Take 50ml of fruit juice is mixed with 10 ml of honey in hot water and given on empty stomach to reduce obesity.
12	<i>Clitoria ternatea</i> L.	Papilionaceae	Sangupushapam	Fruit	Paste of fruit is applied externally on insects and scorpion bites.
13	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Kovai	Root	Take 10g of root powder is given orally with hot water in case of diabetic.
14	<i>Eclipta alba</i> L.	Asteraceae	Karisalamkani	Leaf	Take 10-20 ml of leaf extract is given with cow milk for jaundice
15	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Ammanpachai	Whole plant	Plant powder smoke (in cigarette form) is inhaled to reduce asthmatic pain.
16	<i>Leucas cephalotes</i> (Koen.ex Roth) Spr	Lamiaceae	Kasithumbai	Leaves	Paste of leaves made with turmeric is applied externally to treat dermatitis.
17	<i>Nerium indicum</i> Mill.	Apocynaceae	Manjal arali	Root	Paste of root mixed with 'Neem oil' is applied externally to treat leprosy.
18	<i>Phyllanthus amarus</i> L.	Euphorbiaceae	Kella nelli	Whole plant	Take the 100ml of plant Juice is orally given in case of jaundice.
19	<i>Ricinus communis</i> L.	Euphorbiaceae	Amanaku	Seed	Take the 10ml of seed oil is given orally for constipation.
20	<i>Tephrosia purpurea</i> (L.) Pers.	Papilionaceae	Vallaichedi	Leaves	Smoke of Leaves is inhaled as cigarette to overcome asthma pain.

Figure1: Kani Tribal settlements in Kanyakumari district.



Vellambimalai



Kolanchimadam



Manalodai



Aarukani



Mothirai malai

Figure 2. Utilization of Bioresources by Kani Tribals



Collection of Greens



Preparation of Rubber sheets



Drying Cassava



Collection of Ricinus seeds



Jack fruit Sharing



Betel for commercialization



Home garden- Pepper



Figure 3. Indigenous Technological Knowledge of Kani Tribals



Figure 4. Religious and Cultural activities of Kani Tribals



CONCLUSION

The living of man in all societies is largely guided by the availability or otherwise of natural bio-resources. However, the tribal people who are regarded as in the primitive stage and experiencing slow pace of development have a high degree of dependence on the natural resources for their livelihood. Bio – resources consist of all biotic components of environment, which have utility and function in satisfying the individual wants as well as social wants of man. Recently, the importance of the study on man and nature relationship has gained momentum globally and has emerged as main concern for both the developed and developing nations worldwide. As such, the tribal dominated areas by virtue of having the higher percentage of forest cover have become prime area for research in the world context for sustainable use of bio-resources.

The present study reveals that for the sake of survival in the area, people use their old age indigenous

knowledge where natural bio-resources as well as natural phenomena play an important role in shaping their life and culture. Due to the increase in population leading to the knowledge of market economy the linkages between the people and the bio-resources is gearing up remarkably. Such a study in the tribal inhabited area is essential to create awareness and realization among the forest dwellers about the harsh linkages emerging out of higher level of interaction with the forest ecology. Hence, the paper is significant for the forest dwellers to assess the level of bio-resource utilization, cultural habitats of tribals and framing strategies for sustainable utilization of forest resources in future continuum.

ACKNOWLEDGMENT

The authors are greatly acknowledged the ICSSR, New Delhi for their financial assistance through the Major Research Project (Ref: No. (F. No. 02-229(OBC)/2014-15/ICSSR/RPR dt.24.11.2014).

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