

Cultural, Ecology and Resource management: A Geographical Study on Raji tribe of Uttarakhand

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ABSTRACT

Modernization, globalization and environmental changes are constantly changing human life and their cultures. In this context we need to value the tribal culture and to study the cultural ecology and ecological culture for sustainable development of environment. In cultural ecology; Raji tribe is the study of human adaptation to social and natural environment and ecological culture of Raji tribe is sets of knowledge, norm and idealism that help to interact with the environment. This paper explores social, cultural and scientific approaches to modern interpretation of ecological culture and cultural ecology of Raji tribe. And also the cultural transformative process is the relationship between society and nature in studied and internal and external process of their interaction are also exposed. The Raji tribe are socially and economically most underdeveloped tribal community of Central Himalayan region of Uttarakhand state. Few decades ago they were nomadic people and now with the help of their own intelligence, environmental knowledge and interaction with outer society they are transforming into the modern people. But cultural ecology never sustained without ecological behaviour and ecological behaviour are impossible without ecological culture. So development of ecological culture is essential for the society of Raji tribe and their cultural ecology helps to sustainable development.

Keywords: Modernization, globalization, ecological culture, cultural ecology, sustainable development

Introduction:

Raji tribes who are localized in particular region (the steep hilly region of Uttarakhand) are struggling to survive. Raji tribes interact with environment, other society, and are using technology. Nature and culture are the opposite ideas of the world. Cultural development is achieved against nature but nature is not the result of human intervention. However for evolutionary development of human, culture is the part and parcel of the ecological niche within which human being thrived. Thus culture help to biological development of a species. But neo-globalization is leading to thoughtless plundering of natural resources unacceptable intensification of inequality and standardization of cultural identities. Aboriginal people who were considered “primitive” have avoid this pitfall thanks to their exceptionally strong relationship with nature, of which they consider themselves an integral part. But ecological changes compel them to adapt and assimilate

Cultural ecology is the study of human adaptation to social and natural environment.

The purpose of cultural ecology is to explain the origins of particular cultural pattern which characterize particular cultural areas instead of deriving general principles applicable to any cultural- environmental situation (Steward, 1955). “Ecological culture is a survival ethic and moral imperative of ecological commandments for society as a whole and the individual in particular. It provides support through the process of the formation of ecological world view of every human, his/herself improvement (change the inner nature of the individual) as ecologically conscious, and ecological social attitude towards nature” (Ridei et al. 2013). The Raji tribe has been included in the list of 18 most threatened human groups of the country (Rawat 2014). The committee, headed by Gobinda Chandra Naskar on August 2013, had earlier expressed its apprehension about the decline of population of the vulnerable tribal group (PTG) like Raji in Uttarakhand. Kundu, M. (1992) advocates for designing an effective pedagogy for tribal education in India for the purpose of anthropological and sociological study of tribal is necessary because the study of their culture, folklore, traditions, customs, superstitions and attitudes.

Objectives:

1. To discuss the *cultural ecology* of Raji tribe i.e. depending on how they interact with society and nature.
2. To deliberate the *ecological culture* of Raji tribe.
3. To study the relation of *cultural ecology* to improve the *ecological culture* (interaction, education, ethics, and science education) for sustainable development.
4. To discuss the impact of ecological culture on resource management.

Hypotheses:

1. The life and livelihood of Raji tribe are an example of *cultural ecology*.
2. They have their specific *ecological culture*.
3. Their *cultural ecology* can improve the concept of *ecological culture*.

Methodology:

Universe of the Study: Both Fundamental and Historical research.

Sampling Frame: Jamtadi, Madanpuri, Kimkhola, Bhaktirawa, Kulekh of Pithoragarh district Uttarakhand

Sampling Method: Random and Purposive Sampling.

Sampling Size: 50% Raji people of Pithoragarh, Champawat, Udam Singh Nagar district and Didihat tahsil.

Units of Observation:

In respect of geographical location: Jamtadi, Madanpuri, Kimkhola, Bhaktirawa, Kulekh of Pithoragarh district Uttarakhand

In respect of direction of research: Demography, Settlement, culture, environment, challenges and conservation

Sources and Types of Data:

Primary data has been gathered through fieldwork and *perception study*.

Secondary data has been obtained from Gram Panchayat and villages like: Jamtadi, Madanpuri, Kimkhola, Bhaktirawa, Kulekh of Pithoragarh district Uttarakhand.

Tools and Techniques for Collection of Various Categories of Proposed Data: Questionnaire (open ended), Schedule (face-to-face), Interview (prefer to village headman) and Observation (direct) all have been used here to get the data.

Data Analysis:

Statistical techniques: Descriptive statistics has been used here.

Result and Discussion:**Objective I*****Cultural ecology of Raji tribe***

Uttarakhand is the state of Central Himalayan region in India, inhabit the five scheduled tribes – the Tharus, the Jaunsaries, the Buxas, the Bhotias and the Rajis. These tribal communities present a significant degree of culture and ethnic diversity. The Raji, when they were hunter and gatherer their places of residence were confined amidst of the dense forests. Today they are found in the forest area of Indo- Nepal border in Uttarakhand. It is a little known tribal community which is the descendants of prehistoric Kiratas .They were comparatively early settlers of Uttarakhand than the Khasas, Nagas, Aryas and the Tibetans. But with the invasion of different ethnic groups, the Kiratas gradually vanished from Uttarakhand and their descendants which is known as Raji tribes stayed in Kumaun and Nepal. Today Raji are not aware of their prehistoric Kiratas origin. They claim to be descendants of one of the princes of Askot. The Raji tribe, little known tribal community was brought to light for the first time in 1823 by the Commissioner of Kumaun, C.W.Traill. Raji tribe, also known as Ban Rawat or *Ban Manus*. They were comparatively early settler than Nagas and Khasas. In Uttarakhand Raji is one of the five tribes and one of the two PTGs. Their population is distributed in two districts of Uttarakhand namely Pithoragarh and Champavat. Their population are scattered in ten villages on hill area of two districts. In Pithoragarh there are 9 Raji villages with 682 people where as 123 people live in Champavat district in a single village. Their cluster settlement has been shown on steep hilly slope and forest area near Kali river. Their small huts are located at the elevation of 2000 ft- 6000ft from sea level amidst dense forest.

Name of Districts	Name of the villages	No. of families	Total population	Male	Female
Pithoragarh	Kimkhola	46	176	93	83
	Bhagtirwa	16	54	35	19
	Gangaon	20	75	39	36
	Chipalthara	12	36	19	17
	Jamtadi	22	95	44	51

	<i>Altadi</i>	8	38	24	14
	<i>Madanpuri</i>	15	60	28	32
	<i>Kutachaurani</i>	27	113	58	55
	<i>Kulekh</i>	8	35	19	16
<i>Champavat</i>	<i>Khiradwari</i>	28	123	72	51

Table1: District and village wise population of Raji tribe in Uttarkhanda

Source: Base line survey report and field survey report 2017

Table2: Population growth of Raji tribe in uttarakhand1991 to 2016

Year	Total Population	Population Growth Rate
1991	1279	-
2001	517	-5.96
2011	690	3.35
2017	805	2.78

Source: Census 1991,2001,2011 and field survey 2017

Table 3: literacy rate of Raji tribe in uttarakhand1991 to 2016

Year	Male	Female
2001	47.20	22.50
2011	79.65	50.57

Literacy rate increases 20% to 35.1% from 1991 to 2001. They are interested in higher education but they have no technological amenities and facilities.. Now their interest on education is growing on. So, literacy rate is growing on. From 2001 to 2011 male literacy rate increases from 47.2% to 79.65% and female literacy rate increase from 22.50% to 50.57% .

Table4: Academic qualification of Raji tribe in Uttarakhand, 2016

Qualification	Percentage
Illiterate	59.2
Primary (Below V)	18.2
Middle(V to VIII)	18.6
Secondary and higher secondary	2.4
Technical and non technical diploma	0.0
Graduate	0.6

Source: Field Survey 2017

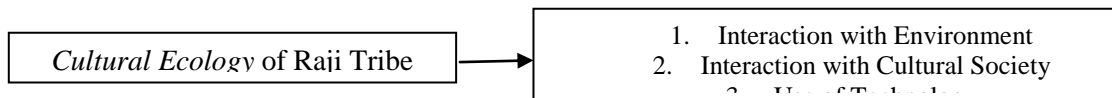
Table 5: Occupational structure Raji tribe in Uttarakhand, 2016

Occupation	Cultivator		AgriculturalLaborer		HouseholdIndustry		Others	
Year	Male	Female	Male	Female	Male	Female	Male	Female
2001	68.90	63.60	3.30	31.80	0.00	0.00	27.90	4.50
2011	19.40	50.00	9.70	8.97	8.21	14.10	62.69	26.92

Table 6: Village-wise primary occupation structure Raji tribe in Uttarakhand, 2016

Name of the villages	Primary occupation
<i>Kimkhola, Bhagtirwa</i>	Wood collection and quarrying, agriculture
<i>Ganagaon, Jamtadi, Madanpuri</i>	Wood collection and agriculture
<i>Chipallthara</i>	Labour and wood collection
<i>Altadi, Jamtadi, Kulekh</i>	Agriculture and labour

Cultural development is occurred by increasing the efficiency of use natural resources (i.e. *Adaptation*). Cultural development is occurred by increasing the interaction with other cultural society and by use of technology (i.e. *Assimilation*). In this way the concept *Ecological Crisis and Cultural Transformation* have generated among Rajis. *Cultural ecology* is the study on origin of particular pattern which characterize particular area. It is based on the interaction of culture, man and environment. *Cultural ecosystem* is the interaction system of culture, man and environment and it is builds up on the basis of the interaction with environment, society and use of technology:



1. Interaction with Environment

The Raji tribes socially and economically are the most underdeveloped tribal community of Uttarakhand. Their livelihood is totally dependent on the available natural resources. Raji tribe is one of the endangered tribe in Uttarakhand. At first they were nomadic (cave dweller). Then they were the food gatherers having no any permanent settlement of residence. They subsisted on a jungle produce. They take wild fruits, honey and tree roots from the forest. They were non-vegetarian and hunted big or small animals from jungles for the purpose of food directly. After that they collected wood from forest and make wooden things. But Indian forest rules (Forest Policy-1894, Indian Forest Act-1927), crisis of wood, crisis of wild animal and others environmental problem make their life difficult. As a result they are going to extinct. Now with the help of the government and non-government organization they are struggling to survive. They have built up permanent house. They are cultivating now. They also have agricultural land which is very small. They produce low quality and little quantity of cereals, and cultivate very few vegetables. They are depending on monsoon for irrigation. They are making very few wooden things and tools for agriculture from forest wood. They are now involving in cultivating honey bee and make little household industry.



Plate: The photos depict the interaction of Raji tribes with Nature

2. Interaction with Cultural Society

The Raji ethnic group presents a significant degree of culture and ethnic diversity to Indian heritage. Once upon a time they were shy people and lived in a dense forest and feared to talk to people of other community. About fifty years back, they move from forest to forest and their occupation was gathered food and hunting and collecting wood from jungles. Socially they were isolated from the rest of the non-tribal society and their livelihood was in peculiar tradition. They were far away from the literacy and means of communication and transportation and therefore deprived from all sorts of intra-tribal relations. With the acceleration of development and communication with the outside world and other communities the Raji have struggled to keep up a way of life they greatly value. Onerous forest laws have also made their life difficult. They were once famous for the barter trade. Now they sell things which they are collected from forest, and are produced from cultivation, in the local market daily. With the help of Indian central and state government and some non-governmental organization, now they are trying to survive and interact with outer society, they are transforming into the modern people. But in spite of the implementation of various welfare schemes, they are still following in the stream of distress and socio-economic backwardness. When they were cave dweller had not dressed. Female people have dressed *sari*, *salwar* and male persons have

dressed pant shirt. They also worship all aspects of nature. The Raji construct simple open- air altars with prayer flags and cloth swaying in nearby tress. Now they keep statue and photos of Hindu God and Goddess and worship them. The most primitive Raji tribal group is socially and economically very poor in condition. Most of the Raji tribes are illiterate. Lack of health awareness on healthy lifestyle, they are suffering from malnutrition and different type of illness. To survive with the changing world they trying to develop themselves by increasing the efficiency of use natural resources, use of technology and increasing the interaction with other cultural society. But developing culture is not ecological due to the lack of education, awareness and consciousness.



Photo: An example of interaction with cultural society

3. Use of Technology

Once upon a time when they were nomadic they did not know the use of technology. After that when they became semi permanent they used some primitive tools. Now they are using some modern technology (solar light, mobile phone, television) though they are very poor in use of technology and technological knowledge till now.



Photo: Adaptation of modern technologies by Raji tribe

Due to the direct interaction with nature Raji tribe has some knowledge about natural aspects which they had learned directly from nature by struggling with environment. Kumaon Himalaya is rich in traditional medicinal plant. Their traditional knowledge about medicinal plant which is being transmitted from one generation to another is going to extinct. They know about some wild fruits, tree roots and nature of wild animals and birds. The indigenous initiatives are also taken by Raji tribe to protect nature on religious basis. The “sacred groves” which are protected for their local deities also save forest land, biodiversity and many rare flora in forest region.

Table8: Medicinal plants use by Raji tribe

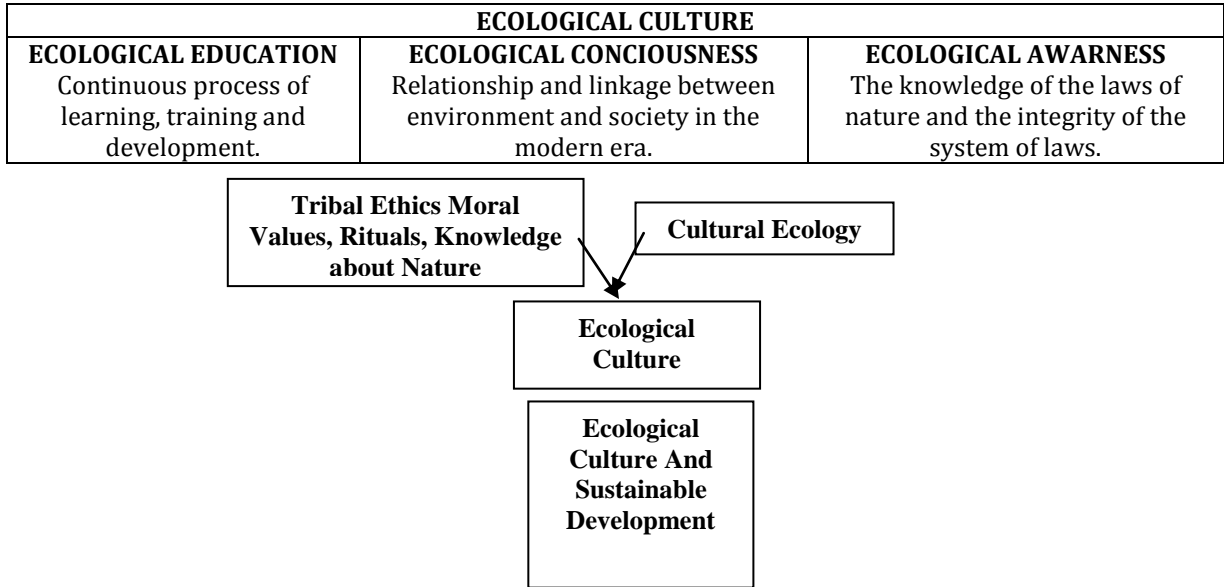
Name of disease	Parts Of Medicinal Plants Use As Medicine
Tooth Worm	Leaf Of Timur Tree
Headache(Sirdard)	Resin Of Shyarhee, Seed Oil Of Dalta And Root Juice Of Khajima.
Eye Ailments(Aankh Dukhna)	Root Juice Of Kirmori And Leaf Juice Of Chamoree.
Bodyache(Badandaed)	The Oil Of Mahua, Resin Of Shyarhee, Root Juice Of Khajima And Seed Oil Of Dalta.
Fever(Bushaar)-	Extract Of Bon-Tulshi And Hot Water ,Aonlya Seed Powder,
Cold And Cough(Khansi And Sardi)-	Extract Of Bon-Tulshi, Root Juice Of Binait.
Cuts And Wounds(Katna Aur Chot)	Urinates Over The Cuts, Leaf Juice Of Dhonjan And Resin Of Shyarhee.
Burns(Jalna)	Paste Of Nirbusi And Wood Paste Is Also Applied.
Itching And Other Skin Ailments	Poultice Of Mothya Leaves, Paste Of Angyan And Leaves Of Lampatya.
Dysentery & Diarrhoea(Paani Aana)	Buds And Flowers Of Kamoichan, Fruit Paste Of Timul Is Given With Salt.
Stomachache(Peit Dard)-	Paste Of Entire Kamoichan Plant, Fruit Paste Of Timul With Salt And Root Decoction Of Pyaljar.

Source: Field survey, 2017

Objective 2

Ecological Culture and Raji Tribe:

“Ecological culture is a survival ethical and moral imperative of ecological commandments for society as a whole and the individual in particular. It provides support through the process of the formation of ecological world view of every human, his/herself improvement (change the inner nature of the individual) as ecologically conscious, and ecological social attitude towards nature.”(N. Ridei,Yuliya Rybalko,Yuliya Kycherenko,Svitlana Palamarchuk,2013: p14-23).The conjunction and filtering process of cultural ecosystem, ecological behavior (ethics, moral values, rituals etc.) and ecological culture (education, awareness, consciousness) ecological culture of Raji tribe will be help Raji tribe to survive and develop.



Objective III

Relation of Cultural ecology and Ecology of Culture to sustainable development:

The Raji tribe in Central Himalaya inhabited so remote and inaccessible area of Uttarakhand that they are deprived of almost all kinds of basic necessities like education, sanitation, health assistance and pure drinking water. There are many ethnographists who do not have a clear idea about the Raji tribes of Central

Himalaya and there are very few researches on them. After the completion of this research work, people will come to know about this particular Tribe in respect of demographic view, settlement structure, socio-economic-cultural terrain, environmental sustainability, and challenges to sustain. The Tribe and our Indian Tribal Research, too, will be benefited. All aspects of the Raji tribe's life like: racial history, population, migration, birth, death, sex ration, education, demographic dynamics, marriage, dress, funeral, spiritual activities, their food habits, belief, traditional knowledge, environmental knowledge, disaster management knowledge, racial identity, settlement, political life, administrative system, traditional game, indigenous identity, ecology, and their geo-political importance will be recorded in the research archive. The Raji tribes have lived a very isolated existence. They suffer from severe malnutrition. Without health facilities, skin diseases and tuberculosis are widespread. The mortality rate among infants and children is also high. This is primarily because they do not understand the necessity of personal hygiene. Raji villages, with its flora and fauna and immense natural beauty, are fast turning out to be a popular tourist destination. Speaking of ways in which the Tribe could benefit from tourism and Raji tribes could find employment as guides and porters for the tourists who visited the region. With the invasion of modernity and western perception most of the indigenous-demographic structure, traditional-socio-cultural-economic terrain, settlement structure, ecological viewpoint, and resource management are being changed. To conserve their historical identity and to curtail the challenges of their contemporary life this research is very much important. In this way they can conscious vis-a-vis our Indian Government can also give prior intention on the matter of their conservation.

Traditional settlement, socio-cultural-cultural life, and environmental knowledge of Raji tribes can be as important as, and sometimes even more important than, the knowledge of the geographical terrain. These all are relevant and important to policy and strategy making foe their conservation. We can consider demographic view, settlement structure, socio-economic-cultural terrain, environmental sustainability as the way Raji tribes assign meaning to the world around them and define their place in that world.

Objective IV

To discuss the impact of ecological culture on resource management

Once upon a time nomadic Raji tribe who were the hunter and food gather is the instance of biological man. In future Raji tribe will be turned into technical man. Interact with environment they have to go among some periods which are:

- A. Period of hunting and food gathering
- B. Period of animal domestication and pastoralism
- C. Period of plant domestication and agriculture
- D. Period of science, technology and industrialization

The impact of interaction between man and environment, developed cultural ecology will be turned into ecological culture by knowledge, consciousness and awareness. After that cultural ecology will help Raji tribe in SWOT analysis. Swot analysis is a strategicplanning technique which used to identify the strengths, weakness, opportunities and threats related to the subject.

	Helpful	Harmful
Internal origin	Strength	Weaknesses
External origin	Opportunities	Threats

Impact of Ecological culture and changes in Raji’s livelihood:

- They use solar energy.
- They save rain water for harvesting.
- Interest growing on education
- They do not hunt big wild animal

Table: 9 Matrix illustrating the relationship between landscapes structure (pattern) and landscape function(process) for water, people, and wildlife:

Landscape structural elements	Landscape functions or process		
	Water	People	Wildlife
Matrix forest	Filtering, infiltration, water cycle regulation	Timber, recreation, aesthetics	Main habitats to forest wildlife species, mainly interior species
Patches Wetland	Filtering, infiltration, water cycle regulation	Water cleansing, control for point and non- point pollution, flood control, scientific research, recreation and aesthetics	Habitat for wetland species, stepping stones for migrant bird species
Corridor roads	Car pollution source, erosion, increase run-off and concentration times, bridges as potential bottlenecks	Movement and transport, recreation	Conduit, barrier, major cause for habitat fragmentation, perturbation source, facilitating penetration by people and pollution
Major river	Water movement, flood control	Water for consumption, movement and transport production(fish, ...), comfort, e.g air cooling, media were sours are rejected, scientific research, recreation and aesthetics	Habitat for larger species, bird and other small to medium sized riparian species, important corridor for movement of other species,

Source:botequilha Leita, J Ahern/ Landscape and urban planning 59 (2002) 65-93

Table 10 : resource management pattern :

Resources	Nomadic stage Interaction with environment	Cultural ecology (interaction with nature and other society)	Ecological culture Education, awareness, consciousness(proposed)
forest	Hunting ,wood collecting, medicinal use, food	Food, Use forest wood for making primitive tools utensils, fuel wood, settlement	Eco-tourism and recreation forest, medicinal plantation, village forest, sacred forest, clan forest, regeneration forest, working for maintain forest resource
land	habitation	For habitation, economic land(mainly agriculture) , socio cultural land(for settlement, road, sacred land)	For habitation, economic land(agriculture, plantation, recreation aesthetic , eco tourism) , socio cultural land(for settlement, road, sacred land, drainage system, sanitation based on eco-centric approach)
Water(wetland, river, surface water)	For drinking, cleaning, collecting fish.	For drinking, cleaning, agriculture, collecting fish	Water for consumption, production(fish, ...), comfort, e.g air cooling, recreation and aesthetics, control pollution, Save water, save rain water
Wild life	Use for food	Use for food	Protect them for biodiversity for aesthetic and eco tourism.
energy	Forest wood	Forest wood, solar energy	Eco friendly energy,Solar energy

Sustainability of Raji tribe community is a concept which promotes equality between the Raji tribe people of today and the Raji tribe people of tomorrow. The idea of sustainability is to create a balance between their demography, ecology, social and livelihood needs. Their needs of today must be taken care of in such a way that it does not negatively impact the needs of the next generations. Ecological sustainability of Raji tribe community refers to the capacity of the biosphere to meet the needs of the present Raji tribes, without hindering future generations from being able to meet their needs. This means using their natural resources shrewdly in the short-term so that these resources are available in the long-term. Ecological sustainability is the belief that all Raji tribes must use natural and indigenous resources wisely and efficiently so that these resources never become exhausted. To ensure that the environment is not destroyed forever, humans need to start living in a way which reduces their pressure on the environment and helps to preserve the Nature's resources for the future (means ecologically sustainable development in Raji tribe and their socio-

economic-cultural environment). This means that Raji tribes not only need to avoid destroying the environment any further but also attempt to repair the resources which have already been damaged.

The need for study of this tribe is highly valuable and relevant in the light of their present environmental conditions and adaptation to environments. Due to cultural suicide, mixed culture, cross-culture, globalization and modernization most of the indigenous ecological resources, settlement structure, socio-economic and cultural terrain are belonging at the edge of destruction. The concept of sustainability is highly questionable for tribal society. Changes may found in their social and cultural adaptations as a result of inter and intra connectivity and opening up of spatial and economic relation with surrounding territories and cultures. Being a researcher we should develop a conceptual framework for understanding their demographic and cultural changes, as well as human-environmental relationships. In this paper, an aspect of demography, settlement, indigenous socio-culture, economic and livelihood opportunities, resource of natural environment related with their life, Nepal-India political geo-boundary and their life, Governmental approaches for development in the areas of Raji tribes territory and sustainability issues (development which achieves ecological sustainability while striving to meet Raji tribe's other needs) of the tribe in terms of traditional resources management (the maintenance of life support systems and the achievement of a 'natural' extinction rate) will be highly concerned.

Summing up we can be concluded that the endangered Raji ethnic group is also in crisis of their heritage, language culture and identity. Some welfare schemes of government and non- government organization help them to develop their poor condition and help them to survive with the changing global world. They are trying to adapt and assimilate with the changing environment. We have thought only to teach them and civilized them but we never tried to learn from their culture, value based society and traditional knowledge. But the cultural ecosystem of Raji tribe sustained when development will be sustainable. So we need to learn their eco-culture, help them to educate and increase their awareness, consciousness on environment. If the development will be done in eco-centric pattern and their cultural ecology developed with ecological behaviour, cultural ecosystem of Raji tribe will be transmitted in ecological culture which is essential for sustainable development.

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