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## Indigenous People and their Wisdom in Environment Protection in Kupwara, Kashmir, India

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**Abstract:** *The local wisdom of indigenous people in nature conservation plays a critical part in protecting the planet's biodiversity and the overall health of the ecosystem. However, at the same time, indigenous people and their lands are facing immense threats through modernization and globalization. This study aims to systematically review and analyze the local wisdom of the indigenous people in sustainable development in Kupwara, Kashmir, India. The present study integrated multiple research designs, and reviews, mostly based on a carefully planned field survey. Through content analysis, this study was divided in to seven main categories: (a) forest management, (b) flora and fauna conservation, (c) food security, (d) water management, (e) land management, (f) weather forecasting and (g) others. The findings offer some basics on how academics can adopt the existing local wisdom of indigenous people in nature conservation in to the scientific and design to answer the sustainable development 2030 Agenda.*

**Keywords:** Ethnobotany, Indigenous knowledge, Traditional Practices, Sustainable development, Biodiversity Conservation

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## 1. Introduction

Indigenous people are those who live close to nature. They are among the poorest of the poor, and thus the most threatened segment of the world's population in terms of social, economic and environmental vulnerability. Nearly 15% of the world's poor are indigenous people, even though indigenous people constitute an estimate 5% of the world's population. At the same time, 80% of over 370 million indigenous people worldwide are spread across Asia and the Pacific, a region particularly vulnerable to the impacts of climate change. The World Bank estimates, that of the 100 million people across the world that could be pushed back in to poverty as a consequence of climate change, 13 million in East Asia and the Pacific could fall in to poverty by 2030. Hence, this implies that indigenous people could be worst affected. These figures highlight an important challenge in achieving the 2030 Agenda for Sustainable development, which was adopted with the pledge that "No one will be left behind". The challenge will require focusing on indigenous people harnessing their potential as agents of change and development [1]. The local wisdom of indigenous people in nature conservation plays a critical part in protecting the planet's biodiversity and the overall health of the ecosystem. At the same time, indigenous people and their lands are facing immense threats

through modernization and globalization [2]. The present study integrated multiple research designs; with the rate of species extinction is accelerating and will continue to do so if humans do not change the way they interact with nature. Mankind is a part of nature, but humans think they are masters of nature, they think they can do whatever they want, or we can say it is the disposition of humans to consume natural resources at their will. However due this misunderstanding and ideology, our planet is ailing [1, 2]. The changes occur at a very slow rate and with low impacts. So, it has been suggested that modern society may need to look back and appreciate how the people, better known as indigenous people took care of nature long before the arrival of modern civilization [3, 4]. Not all human activities are anti-conservative, for example, when conservation and the use of natural resources amount to the same thing; to care for the forest as a source of livelihood, food and good health, as well as cultural identity [5, 6]. This is the strong and deep bond between community and the place which in turn nourishes a belief that forest resources will continue to sustain the community in the future. "If nature is respected, nature will give you back and provide" [7]. Indigenous people have long histories with their land; in addition, they tend to have a reciprocal relationship with nature, rather than viewing

nature as existing to serve humans. The thinking, intuition, and practices of the indigenous people are called local wisdom or local knowledge is significant in finding a better way for sustainable development [8]. The extreme vulnerability and exposure to climate change can force indigenous people to migrate. Such migrations often also lead to the loss of traditional, economic, social and cultural activities. Equally it leads to loss of traditional knowledge. The ILO has been at the forefront of promoting the rights of indigenous people, the ILO's targeted programs and strategies, including those related to green jobs [9]. Indigenous people in India comprise an estimated population of 104 million or 8.6% of national population. The indigenous people of Kashmir, commonly known as Gujjar Bakarwal are listed as scheduled tribes in the Indian territory of Jammu and Kashmir since 1991. These tribes live close in the vicinity of forests. In 1997 the adaption of Kyoto protocol to reduce global greenhouse gas emission, indigenous people's representatives began to push for engagement in climate change agreements, but they have continued to be side-lined. In 2004, their involvement was given support by the United Nations Framework Convention on climate change (UNFCCC)- the international environmental treaty negotiated at the earth [10]. Indigenous people efforts to protect themselves and the environment were slow to capture media attention in both North and South. In its December 2015 report, the indigenous people

reiterated the link between climate change and the rights of indigenous people, stating that "indigenous people have been making this link for several decades, taking Centre stage in its promotion" [11]. Indigenous people and climate change: from the victims to change Agents through Decent Work" was once again said in the ILO's 2016 technical note which identifies indigenous as essential to the success of policies and measures directed towards mitigating, and adapting to climate change [12].

Indigenous people presented themselves as key players in the achievement of SDGs 13, 14, and 15, at the UNPFII 2017 conference which include combating climate change, sustainably managing forests and halting biodiversity loss [13]. The Rio+20 outcome Document of 2012 stressed the importance of indigenous people in the achievement of sustainable development and the importance of UNDRIP in the context of the implementation of sustainable development strategies. This followed the disappointment of indigenous people having excluded from the Millennium Development Goals (MDGs) in September 2000, which led to their insistence in being included in the drafting of the Sustainable Development Goals (SDGs) [14].

## **2. Methods and Methodology**

### **2.1. Selected Area**

The district Kupwara lies in the Northern part of the Kashmir valley (India). It is a backward

frontier district of Kashmir located between 34.17 to 34.12 north latitude and 73.16 east longitudes at an altitude of 5300 meter above level. The region is characterized by dense forests (Himalayan dry-temperate to subalpine forest types (Haq *et al.*, 2020), rich in floral

diversity and home to many medicinal plants. For the present study, many villages (Chowkibal, Hafthrada, Zachaldara, keran, Budnamal) which lies in the frontier area were selected (Fig.1.).

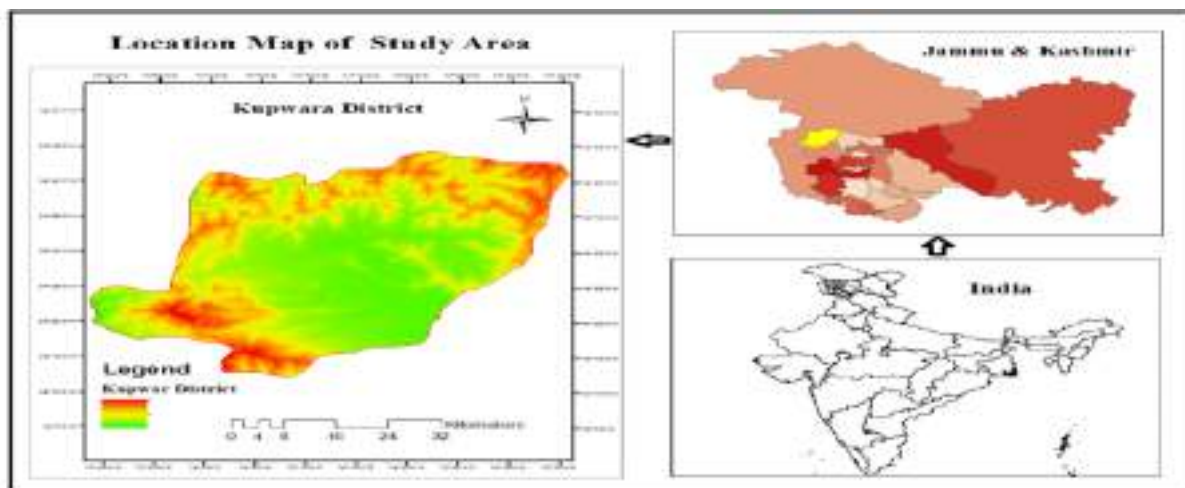


Fig.2.1.: Map showing district Kupwara, Kashmir (India)

## 2.2 Objectives of Study

The major objectives of the study is to promote greater understanding with in the bank and it's borrower countries of the value of cultural diversity in poverty reduction, sustainable development and effective nation building. The specific objectives are:

1. To demonstrate the important role of indigenous people in the management of fragile ecosystems and biodiversity conservation.
2. Establish and maintain effective working relationships with indigenous and traditional groups.

3. Develop a better understanding of indigenous people's interest and visions for conservation.

## 2.3 Methodology

The methodology includes:

Primary data was collected via

- (i) Field survey
- (ii) Interview of the residents
- (iii) Information collected through Well-formulated questionnaires, through Google form.

Secondary data was collected from literature review which comprises of official information (legal documents)

### 2.3.1 Field Survey

Field survey comprises of qualitative method of collection of data. The study was carried out in 2023 in representative villages. The data was collected through face-to-face semi-structured

interviews and group discussions with the indigenous people to document the local knowledge of conservation of biodiversity. The information was collected from diverse groups of the area; Hakeems (traditional doctors), hunters and other common citizens like cultivators/agricultural laborers, skilled or semi-skilled workers, housewives, students.



All interviews were conducted only after obtaining prior informed consent of the village heads or individual informants, by explaining clearly the objective of the study. The most important ethnic groups are the Hakeems, Gujjar/Bakarwals who are directly dependent on forests, wild plants for their livelihood. The field survey was carried out in diverse age-sex groups (young, old, middle). The most important knowledge holders were elderly people, and most respondents were unschooled (65.65%), 21.11% had benefitted from primary education,

12.18% from secondary-level education and only 1.05% from higher education.





Fig. 2.2: Representative survey sites in different biogeographical regions for data collection



Fig.2.3 *Morchella esculenta*



Fig.2.4 *Fragaria ananassa*



Fig.2.5 *Geopora arenicola*



Fig.2.6 *Morus nigra*

### 2.3.2 Interview of Residents

People were interacted in and around Kupwara area to understand the role of indigenous people in management and conservation of biodiversity.

### 2.3.3 Findings Through Google Form

The questionnaire is prepared in such a way that it would help to know about the indigenous people and their wisdom in environment. Through this questionnaire we will also get to know the individual opinions about them and their traditional practices for the conservation of nature.

## 3. Result and Discussion

Field survey, public interaction and responses have shown that the Gujjar/ Bakarwals or which

are commonly known as Pahari, are a group of indigenous people who inhabit the most of the area of Kupwara. A total of 110 respondents (90 men, 20 women) were interviewed. The uneven ratio of men and women was because women was restricted mainly in their homes and do not have access to distant areas. Data was collected from three ethnic groups [Gujjar(40.32%), Pahari(40.32%), and Kashmiri (10.88%)] among which shepherds accounted for 28.44%, herbalists 23.85%, shopkeepers 16.51%, daily laborers 17.43%, and housewives 13.76%. The most important knowledge holders were old people (50%), followed by middle aged (25.97%), and young (22.01%). Most respondents were illiterates (70.55%), where as 14.76% of the participants had primary education, 11.92% secondary level and only 2.75% higher education. Gujjar, Pahari, and Kashmiri languages were spoken by the Gujjar, Pahari, and Kashmiri people respectively. The present study documented the local wisdom of indigenous people in nature conservation. A total of seven themes of local wisdom of indigenous people in nature conservation were extracted from this study; (a) forest management, (b) flora and fauna conservation, (c) food security, (d) water conservation, (e) land management, (f) weather forecasting and (g) others. Based on the study, the most studied local wisdom of indigenous people was forest management 21%, followed by flora and fauna conservation 17 %, food security 16%, water

conservation with 12%, land conservation 13%, and weather forecasting 7%; meanwhile, the others totaled 17%. According to Agatha [15], indigenous people hunt only fish or adult animals for survival. This will allow the animals to reproduce indefinitely while also maintaining the natural ecosystems balance. Food security is the most concerning issue for indigenous people. According to Ibarra *et al.*, [16], indigenous people use crop rotation to ensure they have enough food all year. This will also assist the soil in remaining fertile. During harsh winters of Kashmir the indigenous people use stored dried foods to deal with food scarcity. There are several indigenous practices that are considered to be methods for managing water resources, such as irrigation scheduling, strategic water consumption, and upstream river conservation, rainwater harvesting. The people of indigenous people can forecast weather in order to plan their travel and farming routines. Indigenous people are wise in observing cloud formation as well as wind directions. Indigenous people can also predict tsunamis and typhoons from the sea by observing fish swimming patterns [17].

### **3.1. Why indigenous people face threats from climate change not experienced by other groups of society?**

#### **3.1.1. Poverty and inequality**

According to a recent report World Bank study, climate change could push nearly 100 million people back to poverty by 2030. The impacts of



climate change, such as those due to natural disasters, could increase inequality and contribution to a further “decoupling of economic growth and poverty reduction” [18].

### **3.1.2 Erosion and natural resource-based livelihood**

The indigenous people are mostly dependent on forests. Deforestation not only threatens their subsistence but contributes to around 10-12% of global carbon emission [19]. Frequently lacking recognition of their rights to land, indigenous people face land alienation or restriction to their access to natural resources or territories that they have traditionally occupied. This is mainly because of pressures for natural resource extraction and environmental degradation, and policies regarding environment conservation that do not take into consideration indigenous people’s needs.

### **3.1.3 Migration forced displacement**

Confronted with livelihood insecurity and inadequate levels of income from work in traditional occupations, many indigenous people have been migrating away from their traditional areas, in search of work. Climate change induced natural disasters and loss of livelihoods is expected further to increase such migration.

### **3.1.4 Gender inequality**

Indigenous women and girls play a vital role in traditional and non-traditional livelihoods,

and ensuring food security. Indigenous women often face discrimination from both within and outside their communities. As a result, they are more vulnerable to social economic exclusions, exploitation and gender-based violence.

### **3.2 What makes indigenous people agents of change?**

Indigenous peoples are not just “victims” or “subjects of change”. They are fundamental partners and crucial agents of change for achieving effective climate action, sustainable development and green growth. The present study identifies two principal characteristics:

#### **3.2.1 Unique knowledge and skills**

Indigenous, local and traditional forms of knowledge are a major resource for adapting to climate change. The knowledge and practices of indigenous are already leading the way in sustainable agriculture and forestry, protecting ecosystems for carbon storage, and provide other ecosystem services, which are fundamental for combating climate change, reducing emissions from deforestation and also key for adaptation to climate change. Co-benefits include enhanced livelihood security and green jobs.

#### **3.2.2 Economy based on principles of sustainability**

Indigenous people’s economies primarily depend on natural resources and ecosystems.

Their economic activities predominantly consist of agroforestry, agriculture or the use of forest products and natural resources for their income and living. These include the sustainable harvesting of fish, bush meat, fruits, medicines, roots and other productive materials for construction or handicrafts.

#### 4. Conclusion

The present study on the local wisdom of the indigenous people in nature conservation was conducted to gain insight into how indigenous people all over the world used their local

wisdom to directly or indirectly conserve nature. The study revealed the current scenarios and trends how local wisdom of indigenous people provide sustainable practices essential for maintaining ecological balance of the environment. Hence, it was concluded that proper documentation and preservation of traditional knowledge and active participation of these communities in policymaking would support in developing more inclusive conservation strategies leading to sustainable development while respecting the rights & wisdom of indigenous people.

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