

WOMEN'S CONTRIBUTION TO PRESERVE THE ENVIRONMENT THROUGH INCOME GENERATING ACTIVITIES AND SUSTAINABLE LIVELIHOOD IN KUMAUN REGION OF UTTARAKHAND

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Abstract- Eco-friendly activities are being given priority globally to conserve resources for future generations. The Kumaun Region of Uttarakhand is a sensitive district for biodiversity. There are different types of vegetation and forests in the mountainous and lowland areas. Women have always been in the forefront to keep the entire ecological balanced because most of the activities of women depend on natural resources. They are usually dependent on available natural resources for food, fuel, and shelter. Therefore, it can be particularly vulnerable to environmental hazards and changes. Women workload is focused on the management of natural resources, biodiversity, and ecological systems. Therefore, their experiences and perspectives are essential for the formulation and work of sustainable livelihood and development policies for a healthy planet for the future generations. The income generating activities are conducted by the local women in a manner conducive to environmental protection. Income generations are done by manufacturing eco-friendly products. Women are considered the backbone of agriculture in Uttarakhand. Eco-friendly and eco-tourism activities have emerged as an alternative source of income which not only provides sustainable alternative livelihood for the local women but also helps in preserving the environment and culture of the area through local community participation. The main objective of this research is to study income generating activities conducted by women without harming biodiversity and how women preserve, transform, and transfer these activities from generation to generation to sustain livelihood. For this research primary and secondary data have been used. This research has been done in 02 districts of Uttarakhand Nainital and Udham Singh Nagar. Under this, only those income generation activities, which are necessary for environmental protection, such as eco-tourism, eco-friendly products, home gardens vegetation cultivation etc. have been included. Generating income while preserving the environment is the best thing one can offer to humanity and the present catastrophic climate condition. The outcomes of this research will be beneficial for further research.

Keywords: Sustainable livelihood, Environmental protection, Biodiversity.

INTRODUCTION

Women have a strong understanding of the environment because of their direct interaction with it. Numerous research on women and the environment have demonstrated that women play important roles in managing natural resources and significantly contribute to environmental restoration and conservation. Women are more prevalent in solving some of the most pressing environmental issues. The definition of strength and vitality, women have long contributed significantly to all economic activities in every country (Joshi C.S. and Chaudhary Tanuja, 2021). Women frequently experience environmental concerns most directly because of their responsibilities as farmers, water and firewood collectors, and other local environmental stewards. Women are not just environmentally aware; they are also protective and compassionate. The primary source of human livelihoods and the basis for all human activities are natural resources. More than 1.6 billion people rely on forests to varied degrees for their survival; of the, 60 million are nearly entirely reliant on them, and 350 million live in or near dense woods for both sustenance and revenue creation. The features, distribution, and site need of native trees, shrubs, and plants are subject matter experts among hill women. Utilizing natural resources to provide income for women is essential to the success and sustainability of development. However, the crucial role that women have had in managing and maintaining the old knowledge system cannot be overlooked. Women are crucial in managing natural resources, such as soil, water, forests, and energy, and frequently have extensive traditional and modern understanding of their surroundings (World Bank, 1991). Just like anybody else, women who work for a living sometimes have environmental sensitivities. Regardless of gender, people might have

different levels of environmental care and awareness. However, studies have indicated that women, particularly in specific situations, may have a larger desire to practice ecologically sustainable behaviors because of their responsibilities in resource management and caregiving, which can be strongly related to environmental well-being. Environmental attitudes and actions are influenced by a variety of factors, including education, resource availability, and cultural norms. Since women might be sensitive to the environment, it's crucial to understand that this sensitivity can differ greatly across people and is influenced by a variety of circumstances.

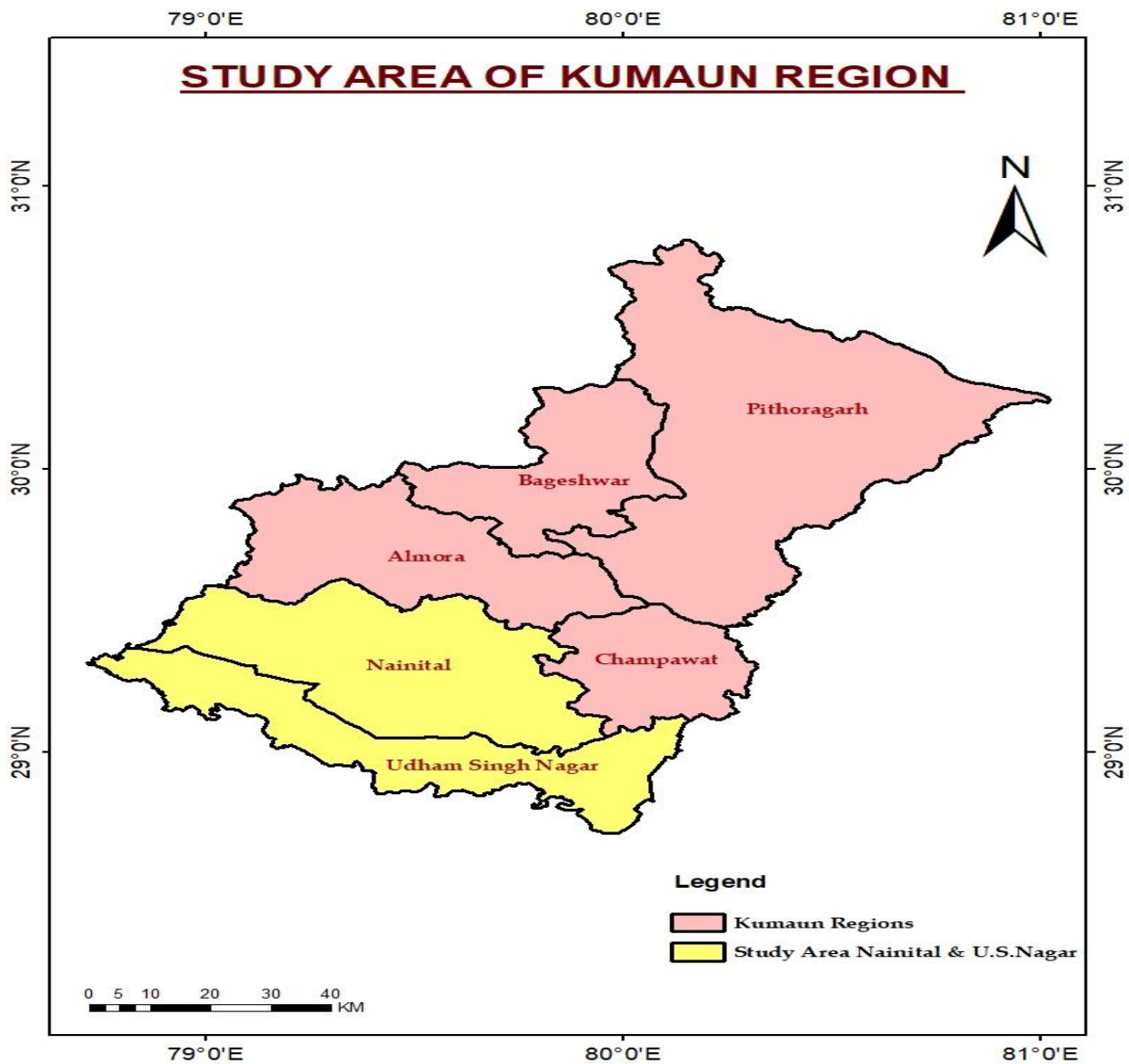
One of the few systems that is both culturally robust and rich in indigenous traditional knowledge is the Kumaun region. Like in many other regions, women frequently play a key part in preserving the environment and creating revenue in the Kumaun region. Because of their intimate ties to natural resources and their involvement in forestry, agriculture, and household management, they especially sensitive to environmental concerns. Despite being historically the most significant and destructive component of biodiversity, man has been foresighted enough to practice honouring and safeguarding environment through holy groves. These are forested regions that are either consecrated to a god or ancestor spirits and are preserved by communities owing to societal taboos. India is a country with a strong cultural ethos, and it practices nature worship. The home of gods and goddesses lies in the western Himalayan region of Uttarakhand. Rivers (Ganga, Yamuna), mountain peaks (Nanda Devi, Chaukhamba, Trishul, Om Parbat), lakes (Roopkund, Kedar tal, Hemkund), and forested regions are just a few examples of the various natural features that are revered. In India, these forested lands go by several names. There is just one sacred grove in Uttarakhand out of an estimated 13,720 across India. The ecology and hill people of the kumaun region cohabit. More than simply the flora and fauna are essential to their way of life; it also depends on their faith in sacred groves, which provides them with extra resources, and on cultural ideals that place a high importance on protecting the environment. The present paper is based on the income generating activities and sustainable livelihood done by women in Kumaun region of Uttarakhand while preserving the environment.

OBJECTIVES

- To study income generating activities conducted by women without harming biodiversity.
- To understand, how women preserve, transform, and transfer these activities from generation to generation to sustain livelihood?

STUDY AREA

The study was carried out in the Kumaun Region of Uttarakhand located in the eastern half of the state. It is one of the two divisions of Uttarakhand state. Kumaun region is bounded on the north by Tibet, on the east by Nepal, on the south by the state Uttar Pradesh, and on the west by the Garhwal region. After the parliament of India passed the Uttar Pradesh Reorganization Act, 2000 on 9 November 2000, Kumaun region became a part of Uttarakhand, the 27th state of the Republic India. The total geographical area of the kumaun region is 21034 sq.km and latitude ranging from between 29.27 N and 79.47 E longitude. The region has total population density is 201per sq. km. The climatic condition of varies greatly due to variation in altitude and proximity towards Himalayan ranges. It comprises six districts Almora, Bageshwar, Champawat, Udham Singh Nagar, Nainital and Pithoragarh. Kumaun region consists of a large Himalaya tract, together with two submontane strips called the Terai and the Bhabar. According to census 2011 the total population of the Kumaun Region is 4228998 with the male population 2138287 and female population 2090711.



RESEARCH METHODOLOGY

This study is conducted in selected district of Kumaun region of Uttarakhand specially Nainital and Udham Singh Nagar. For this research, primary and secondary data have been used. Primary data has been collected through questionnaire, schedule, and field observation. For this, 200 women respondents have been selected by a simple random sampling according to the population of district. Under this research, only those income generation activities, which are necessary for environmental protection, such as eco-tourism, eco-friendly products, home gardens vegetation cultivation etc. have been included. Secondary has been gathered from various source like book, magazines, journals, published and unpublished records. Result and findings are presented in the form of charts, table, and diagrams with the use of Excel.

RESULT AND DISSCUSSION

Due to their extensive engagement in income generating activities, women in the Kumaun Region have consistently emerged as the foundation of the economy. Majority of the productive labor in this region's economy is made up of women. Women contribute significantly to the preservation of the environment through a variety of sustainable income-generating activities and livelihoods. To advance economic empowerment while protecting the environment, women must lead income-generating activities that are ecologically sound and do not endanger biodiversity. Furthermore, community involvement and awareness-raising initiatives might encourage women's income-generating activities to embrace environmentally friendly practice. The success of these income-generating endeavour depends on giving women access to markets, resources, and training, as well as on fostering a policy and regulatory environment that supports sustainability and gender equality. Promoting and selling renewable energy items can help generate money while minimizing negative environmental effects. Examples include solar panels, solar lamps, and

efficient cookstoves. Sustainable cultivation and distribution of traditional medicinal herbs benefits the environment and the economy. Women choose organic agricultural practice that encourage soil health by avoiding the use of synthetic pesticides and fertilizers. Women can work in food processing and preservation jobs that don't hurt the environment, such fermenting, drying, or canning, to add value to agricultural products. Women can make money by creating handicrafts, jewellery, and artwork using sustainable and non-harmful resources. By cultivating a range of crops, trees, and bushes, women can sustain ecosystem diversity while also ensuring their own food security and aiding in reforestation efforts. Beekeeping is a sustainable source of income that promotes biodiversity by pollinating crops. Participating in nearby recycling initiatives or starting a composting and recycling business both produce revenue while reducing waste and advancing sustainability. By providing guided tours of regional natural features and cultural experiences, women take part in ecotourism efforts, which promotes biodiversity appreciation and protection. Sustainable aquaculture and fishing practice generate money while preserving aquatic environments. It can be lucrative and environmentally ethical to establish nearby food markets, cooperatives, or agricultural enterprises that prioritize sustainable sourcing and production. Women can take part in efforts to save wildlife by leading tours, keeping an eye on endangered species, or working in wildlife reserves. By storing and selling heirloom seeds and growing regionally appropriate traditional crops, women contribute significantly to the preservation of biodiversity. Providing local farmers with irrigation and water management services can increase agricultural productivity while preserving water supplies. Women can offer training and educational services for biodiversity preservation, environmental awareness, and sustainable agriculture practice. Women can take part in efforts to save wildlife by leading tours, keeping an eye on endangered species, or working in wildlife reserves. By storing and selling heirloom seeds and growing regionally appropriate traditional crops, women contribute significantly to the preservation of biodiversity. Providing local farmers with irrigation and water management services can increase agricultural productivity while preserving water supplies. Women can offer training and educational services for biodiversity preservation, environmental awareness, and sustainable agriculture practice. Sustainable forest-based businesses, such as those that collect non-timber forest products or manage sustainable timber, can improve livelihoods without compromising the diversity of the forest. Here in the following table, different type of eco-friendly income generating activities done by women are presented:

Table No. 1

Eco-friendly Income Generating Activities done by women

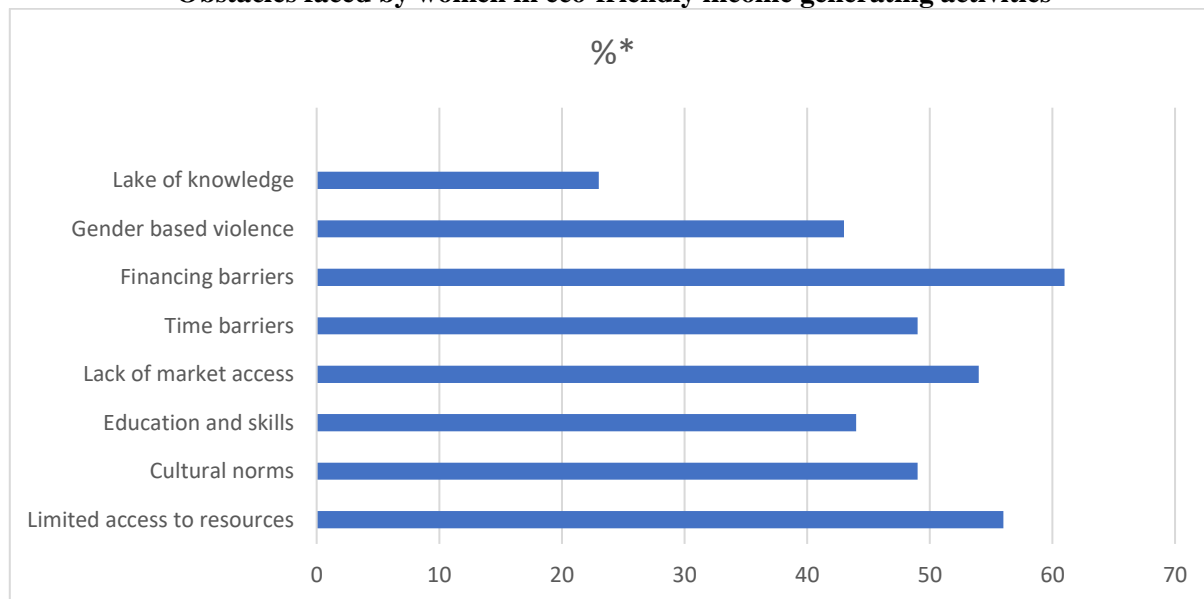
Eco-friendly Income Generating Activities	Female Respondents (%*)
1. Agroforestry and agriculture	81
2. Handicrafts and handlooms	72
3. Eco-tourism and homestay	69
4. Waste management	65
5. Beekeeping and apiculture	55
6. Forest conservation	76
7. Awareness and education	57
8. Water management	49
9. Seed bank	43
10. Rural entrepreneurship	58

Source- Self Survey

Table no. 1 shows women engaged in various eco-friendly income generating activities in Almora, Nainital and Udham Singh Nagar of Kumaun region. From the analysis of above table, 81% women are actively interested in agroforestry and sustainable agricultural methods. They grow native plants and trees, which not only provide cash but also aid in the preservation of the soil and biodiversity. 72% women of Kumaun region are renowned for their skill in weaving on handlooms and traditional handicrafts. Eco-friendly practices are promoted by the frequent use of natural materials and colors in these crafts. 69% women have created eco-tourism businesses in rural regions. This enables them to make money while encouraging ethical travel and a closer relationship with environment. 65% recycling and trash management programs frequently include women. By separating and recycling garbage, they contribute to reducing the negative effects on the environment. 55% women considered that beekeeping is a popular way for women to make money. In addition to producing honey, it promotes pollination, which helps the regional environment. 76% women take part in community-based forest management projects, which promote forest conservation. They participate in activities including tree planting, forest patrolling, and gathering non-timber forest products, all of which help to preserve forests. 57% women frequently take the initiative in educating their communities about environmental protection, sustainable lifestyles, and the value of protecting regional ecosystems. 49% women are actively involved in water management initiatives, such as building check dams and rainwater collection systems, which support sustainable. 43% women construct and manage seed banks, which preserve native plant species and

encourage crop diversification. 58% women in rural entrepreneurship operate companies that deal with organic farming, herbal remedies, and environmentally friendly goods, boosting the regional economy and protecting the environment.

Diagram No.1
Obstacles faced by women in eco-friendly income generating activities



Source-Self Survey

The above diagram based on the women respondent shows, during eco-friendly income generating activities women face many difficulties. Women frequently have limited access to the land, money, and technology needed for environmentally responsible endeavor. Social norms and gender roles that are still prevalent today might prevent women from pursuing non-traditional, environmentally friendly careers. Women's ability to engage in environmentally friendly industries may be hampered by unequal access to education and training. It can be difficult for women business owners to access markets and advertise their products. Women may find it difficult to balance domestic duties with income-generating activities. Women's mobility may be constrained by cultural norms and safety concerns, making it harder for them to participate in some eco-friendly activities. Women may find it difficult to get loans and funds due to discriminatory lending practices and a lack of financial understanding. The possibility of gender-based violence might discourage women from engaging in various eco-friendly industries. Women can be empowered to engage in eco-friendly income-generating activities with the support of initiatives to remove these barriers, such as gender-sensitive regulations, specialized training, and access to financial services.

In order to maintain livelihoods, women are essential in maintaining, passing down, and modifying earning activities from generation to generation. They assist in the following ways:

Table No. 2

Various ways to preserve, transform, and transfer these activities from generation to generation to sustain livelihood

Ways	(%)*
1. Transfer of Knowledge	56
2. Unofficial Training	49
3. Entrepreneurship	52
4. Financial literacy	49
5. Education	66
6. Role modeling	44
7. Adaptation	55
8. Family and community	70

Source- Self Survey

Table no.2 shows, 56% women believe that to maintain the continuity of these customs, women frequently pass on to their daughters and granddaughters their traditional abilities and knowledge in the fields of agriculture, crafts, and other sources of revenue. 49% women participate in informal apprenticeships in many cultures, teaching younger

generations by having them assist more seasoned women in tasks like farming, weaving, or cooking. 52% women who start their own enterprises may provide their daughters the chance to get engaged while also teaching them vital business skills and promoting financial independence. Teaching girl financial literacy is essential to ensuring they have the information and abilities to handle money, save, and invest. 49% women believe that in order to ensure that girls have the information and abilities to handle money, save, invest, and make wise financial decisions, financial literacy education is essential. 66% women supporting their daughters' education, mothers provide them the skills they need to seek occupations, explore a larger range of earning opportunities, and adjust to shifting economic conditions. 44% believe that women who successfully maintain their financial security through their business or work pursuits serve as role models for younger generations, motivating them to pursue comparable career choices. 55% women frequently modify their sources of income in response to shifting economic conditions and marketplaces, passing down their capacity for creativity and source diversity. 70% women may work together with other female family members or community members to engage in income-generating activities collectively, building a network of support for skill-sharing and long-term economic viability.

CONCLUSION

In Kumaun region of Uttarakhand, women play a crucial role in initiatives to promote environmental protection and economic sustainability. Their participation in various sustainable lifestyles and income-generating ventures contributes to the preservation of the region's distinctive ecosystems and natural resources. The above study recorded women contributed actively in income generating activities. Analysis of the above study revealed that maximum participation of women is in agriculture and agroforestry activities. In this district, it has found that they grow native plants and trees, which not only provide cash but also aid in the preservation of the soil and biodiversity. Apart from this, women are participating in activities like handicraft handlooms, eco-tourism homestay, beekeeping, apiculture forest, conservation etc. Women have been more sensitive towards the environment since ancient times. Women have to face many problems in doing income generating activities like time barrier, financial barrier, lack of knowledge, lack of market access etc. The preservation, transmission, and transformation of earning activities by women are crucial for maintaining livelihoods through generations. Their knowledge, abilities, and resiliency make a substantial contribution to the financial stability of families and communities.

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