

Research Article**Sustainable Livelihood and Natural Resource Management in the North Western Himalaya: A Case of Salooni Block of Chamba District, Himachal Pradesh**Twinkle Vaid¹ and Sanjay Singh Pathania²¹Khalsa College of Education, Ranjit Avenue, Amritsar²Principal, Government Degree College, Chowari, Chamba (H.P.)Corresponding author: Email: twinklevoid23@gmail.com**Abstract**

The North Western Himalayan region, known for its ecological richness and cultural heritage, faces mounting challenges in ensuring both environmental sustainability and economic well-being of its rural communities. This study focuses on the Salooni Block of Chamba District in Himachal Pradesh, examining the potential of sustainable livelihoods through the optimal use of locally available natural resources. The research explores forest-based products, medicinal plants, traditional crops, beekeeping, horticulture, and eco-tourism as key areas to enhance income generation for local communities. The paper combines field surveys, stakeholder interviews, SWOT analysis and secondary data to identify viable green livelihood options that are environmentally sound and economically viable. In the present study, primary data was collected from hundred households in the villages of Kuntedi, Langeri and Kandhwara through structured interviews. To ensure the reliability and depth of the findings, participants were selected to represent diverse groups, including elderly villagers, local officials, NGO representatives, community leaders and other relevant stakeholders. The findings highlight that integrating small-scale enterprises, value-added processing, and traditional knowledge with modern techniques can significantly improve rural incomes while preserving ecological balance. It includes policy recommendations to promote inclusive, context-specific strategies for livelihood development offering a replicable model for sustainable mountain development. The study advocates for context-specific strategies that align livelihood generation with conservation goals, contributing to a replicable model of sustainable mountain development.

Keywords: Chamba District, Eco-tourism, Green Economy, Natural Resource Management, North Western Himalayas. Sustainable Livelihoods

Introduction

Sustainability has been a core value in Indian civilization since ancient times, deeply embedded in traditional lifestyles that emphasized balance with nature, conservation of resources, and community-centric development (Gadgil & Guha, 1992). As development paradigms have evolved over the centuries, the underlying principle of living in harmony with the environment continues to be crucial especially in the present era, where ecological degradation and socio-economic inequalities are intensifying due to climate change, and unbalanced development (UNEP, 2019; ICIMOD, 2021). The concept of sustainable livelihoods in India gained prominence during the 1990s through government programs and civil society initiatives that emphasized poverty alleviation, natural resource management, and participatory development (Chambers & Conway, 1992; Scoones, 1998). It focuses on enabling communities to utilize their assets natural, physical, human, social, and financial in ways that are productive, sustainable, and adaptable to change. In mountain regions, this involves tapping into local resources such as non-timber forest products (NTFPs), traditional agriculture, and eco-tourism potential, and converting them into viable livelihood options through value addition, small-scale processing, and sustainable enterprise development (Singh & Pandey, 2020; Thakur & Sharma, 2019).

Himachal Pradesh, nestled in the North Western Himalayan region, is ecologically diverse yet highly vulnerable to both environmental and socio-economic stresses. The state is

frequently exposed to natural hazards such as landslides, flash floods, glacial lake outbursts, forest fires, and erratic precipitation all of which are becoming more pronounced due to climate change and unsustainable development practices (Negi & Palni, 2010; ICIMOD, 2021). While the state has made notable progress in literacy and infrastructure, much of its rural population remains dependent on climate-sensitive sectors such as agriculture, horticulture, and forest-based livelihoods. These sectors are under increasing threat from land degradation, biodiversity loss, and declining water availability, putting the livelihood security of mountain communities at significant risk (Nautiyal et al., 2015). Within Himachal Pradesh, Chamba District is among the most socio-economically backward regions, as identified in various government and academic assessments (Government of India, 2018; Thakur & Sharma, 2019). A large segment of the population depends on subsistence farming, pastoralism, and forest resources, with few alternatives for income diversification. Narrowing down further, the Salooni Block, located in the northwestern part of Chamba District, presents a microcosm of the region's broader challenges. Though endowed with rich natural resources such as forests, medicinal herbs, alpine pastures, and freshwater streams Salooni remains underdeveloped and largely excluded from mainstream economic activity (Figure 1). Its villages are scattered across steep terrains, with limited road connectivity and inadequate support for rural enterprises. Despite this, the region holds significant potential for promoting sustainable and green livelihoods by utilizing local resources such as non-timber forest produce (NTFPs), traditional crops, and eco-tourism possibilities.

Therefore, the present study focuses on identifying and evaluating resource-based livelihood opportunities in Salooni Block, with an emphasis on sustainability, value addition, and community empowerment. By aligning the research with the principles of Sustainable Mountain Development and the UN Sustainable Development Goals the study contributes to the evolving discourse on localized, nature-based solutions for development in mountain regions. By integrating traditional knowledge with modern sustainability approaches, the study aims to contribute to replicable models for balanced development where livelihood generation and environmental conservation go hand in hand.

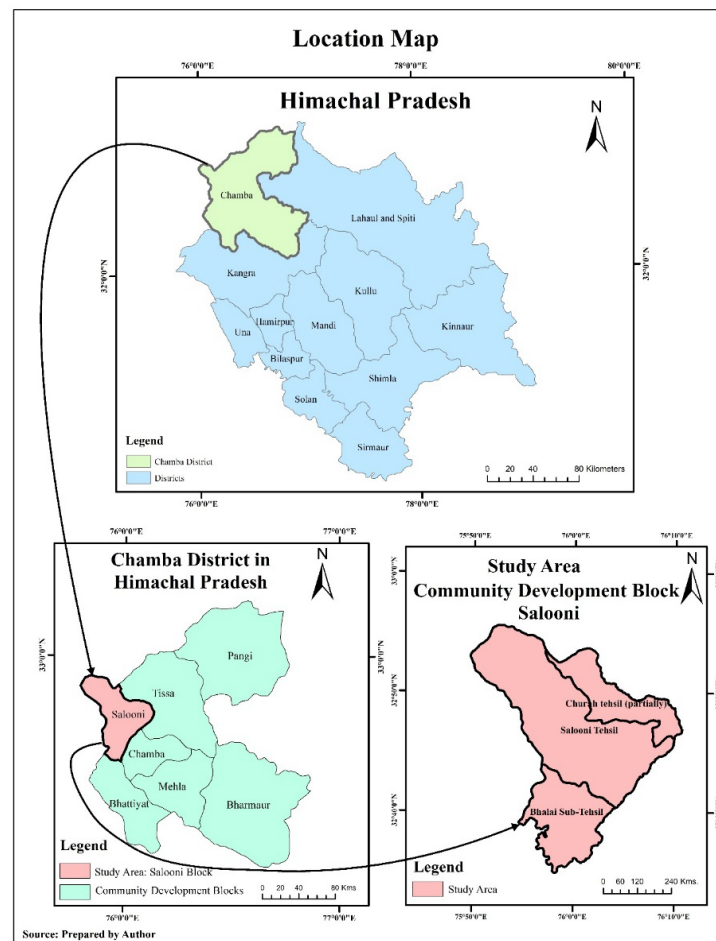


Figure 1: Location Map of Study Area

Study Area

The present study area, Salooni, is one of the seven Community Development (C.D.) blocks of Chamba district in Himachal Pradesh. The area is known for its rich ecological diversity and striking natural beauty. The region spans an area of 576.5 square kilometers and lies between latitudes $32^{\circ}30'0''$ N to $33^{\circ}00'0''$ N and longitudes $75^{\circ}45'0''$ E to $76^{\circ}15'0''$ E (figure 1). Its topography is remarkably varied, with altitudes ranging from 550 meters to 3,900 meters above mean sea level. This variation gives rise to a mosaic of landscapes including dense deodar forests, alpine meadows, snow-covered peaks, glacial streams, and serene lakes. Geographically, the block is bounded by the Pir Panjal range to the north and the Dhauladhar range to the south, making it a part of the north-western Himalayan ecosystem. The region is characterized by a close interdependence between natural resources and traditional livelihood systems. However, it also faces several socio-economic challenges typical of remote mountainous areas, such as limited infrastructure and fragile ecosystems. This unique combination of ecological wealth and developmental constraints makes Salooni a significant area for studying sustainable livelihoods and natural resource management.

Methodology

This study adopted a qualitative and exploratory research design to investigate the potential for sustainable, resource-based livelihoods in the study area. The research aimed to gain an in-depth understanding of local livelihood patterns, available natural resources, and the feasibility of sustainable livelihood interventions. Primary data were collected through a combination of field surveys, semi-structured interviews, and focus group discussions (FGDs). In the present study, primary data was collected from hundred households of villages named

Kuntedi, Langer and Kandhwara through structured interviews. To ensure the reliability and depth of the findings, participants were carefully selected to represent diverse groups, including elderly community members, local administrative staff, NGO representatives, and other relevant stakeholders. Semi-structured interviews were held with a diverse range of stakeholders, including local farmers, forest produce collectors, women's self-help groups, traditional knowledge holders, and panchayat representatives. These interviews provided detailed insights into community dependence on natural resources, existing livelihood practices, and challenges faced by residents in sustaining their incomes. In addition to primary data, secondary data were obtained from government reports, forest working plans, census documents, academic literature, and records from local institutions such as panchayats, NGOs, and cooperative societies. These sources supported contextual understanding and validation of field data.

The analysis of data was carried out using qualitative content analysis to identify key themes and patterns related to resource use, and sustainability practices. A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was used to evaluate the viability of proposed green livelihood options. A purposive sampling technique was employed, wherein villages were selected based on variations in elevation, ecological characteristics, and livelihood patterns. Within each selected village, respondents were chosen to represent diverse age groups, genders, and occupational categories, thereby ensuring a comprehensive and representative range of perspectives.

Results

The assessment of locally available natural resources in the study area highlights significant potential for sustainable livelihood enhancement through various nature-based and traditional economic activities. The data derived from official reports, academic literature, and interviews with government officials, NGO representatives, and local residents reveals a multifaceted livelihood structure rooted in the region's ecological and cultural wealth. This comprehensive approach ensures triangulation of data and strengthens the reliability and validity of the findings. The findings are discussed below under thematic categories.

Forest Resources

Forests in the Salooni block serve as a crucial source of livelihood, particularly through the collection of medicinal herbs, wild mushrooms, and other edible forest products (Figure 2). Key species like *Valeriana jatamansi* (Mushakbala) and *Trillium govanianum* (Nag Chhatri) are highly valued, with some fetching prices up to ₹20,000 per kilogram. Locally available species like morel mushrooms (Gucchi) and herbal plants such as *Matteuccia struthiopteris* (Kasrod), Nettle Leaves are highly valued for both consumption and commercial sale. As noted by a respondent during a field interview on 16th October 2023, despite the effort involved in collecting and processing, the returns justify the labour. Non-Timber Forest Products (NTFPs) provide seasonal income, especially to women, who are responsible for collection in nearly 70% of households. These forest-based resources, though often undervalued, have strong economic potential. To ensure their sustainable use, there is a need for proper valuation, regulation, and promotion of community-based conservation and marketing strategies.

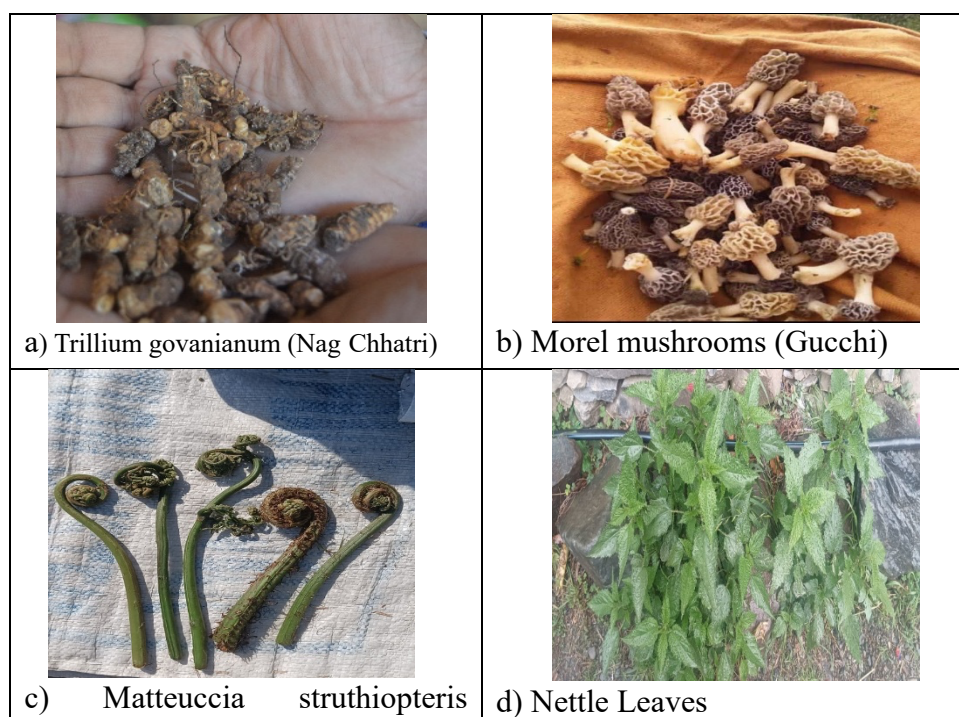


Figure 2: Pictures showing Forest Resources
 Source: Clicked by Researcher during field survey, 2024

Agriculture and Allied Activities

Agriculture is the primary livelihood in Salooni, supported by the cultivation of traditional crops well-suited to terrain and climate of the region. Among these, White Maize (*Hachchi Kukdi*), Red Maize (*Ratti*), and Popcorn Maize (*Chidku*) are locally grown and valued for their rich nutritional content, including essential vitamins, minerals, and antioxidants. The commercial promotion of these traditional maize varieties, along with awareness of their health benefits, holds strong potential for improving household incomes. By tapping into niche markets for organic and heritage grains, and pursuing initiatives such as Geographical Indication (GI) tagging, these crops can gain broader recognition and fetch premium prices (Figure 3). This would not only enhance the economic value of local agriculture but also encourage the conservation of indigenous crop diversity, contributing to both livelihood security and cultural heritage preservation.

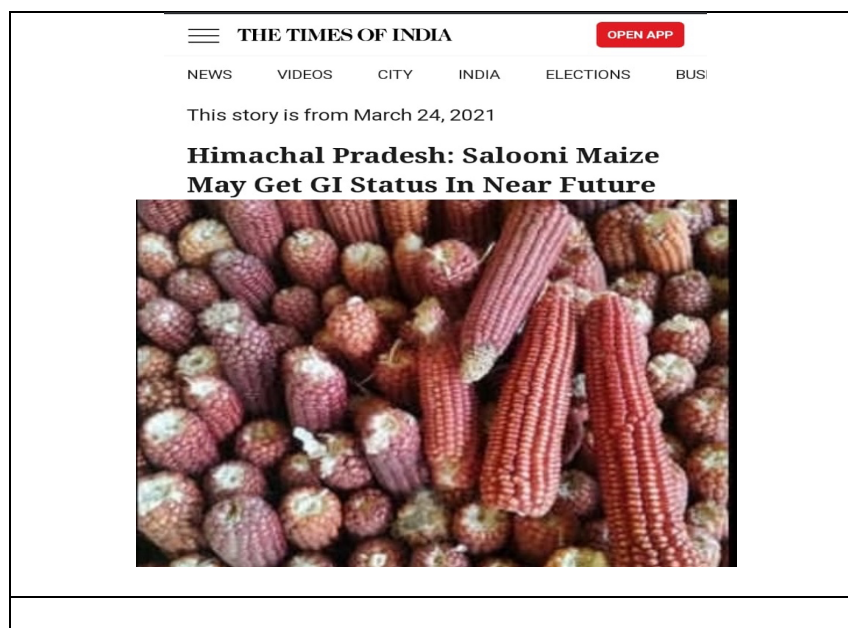


Figure 3: Newspaper Archive, Geographical Indication Status for Salooni Maize
Source: Times of India, March 24, 2021

Horticulture

Horticulture is emerging as a lucrative and sustainable livelihood option in the Salooni block, particularly due to its favourable agro-climatic conditions and mountainous terrain. The region is unsuitable for large-scale traditional agriculture; however, its geography makes it ideal for cultivating high-value crops such as potatoes, peas, cabbage, carrots, and temperate fruits like apples, plums, cherries, apricots, and pears. Additionally, dry fruits and nuts including hazelnuts, walnuts, and almonds are also grown, adding further diversity to local production systems. The implementation of the Green Gold Project by the Department of Rural Development in 2002 played a pivotal role in transforming Salooni into the vegetable hub of Chamba District. This initiative encouraged farmers to adopt vegetable cultivation as a mainstream livelihood activity. According to the local Horticulture Development Officer, farmers in the region are now earning up to ten times more compared to returns from traditional farming practices. Despite these advancements, the horticulture sector still faces challenges such as inadequate cold storage infrastructure, limited market access, and poor post-harvest handling (Sharma & Rana, 2019). Nevertheless, the Government of Himachal Pradesh continues to promote horticulture through schemes like the Mission for Integrated Development of Horticulture (MIDH), along with targeted training programs and subsidies. The gradual introduction of floriculture among local farmers further adds to agricultural diversification, reflecting a shift toward more profitable, climate-resilient, and market-oriented farming systems in the region.

Apiculture

Beekeeping is emerging as a popular and sustainable livelihood option in the Salooni region, driven by its ecological benefits, low investment requirements, and growing market demand. Apiculture not only enhances agricultural productivity through pollination but also provides income from honey, beeswax, royal jelly, and other valuable by-products. The Himalayan terrain of Salooni, though unsuitable for large-scale agriculture due to its climate and topography, offers immense potential for beekeeping. The temperate climate of region, diverse wild flora, fruit orchards, and abundance of medicinal plants create an ideal environment for premium honey production. As observed during field surveys, local

beekeepers refrain from using pesticides and chemicals, which enhances the nutritional value of the honey and increases its market appeal. Apiculture is being actively promoted by NGOs such as SPARK and local Krishi Vigyan Kendras through training programs and distribution of apiary kits, encouraging rural entrepreneurship (Figure 4). Furthermore, the Himalayan region's optimal agro-climatic conditions and rich bee flora make beekeeping a promising avenue for sustainable livelihoods in Salooni.



Source: Photographs provided by Programme Manager, Spark NGO

Figure 4: Spark NGO training locals for Apiculture

Source: Photographs provided by Programme Manager, Spark NGO

Handicrafts

Traditional handicrafts, created using locally available and eco-friendly materials like corn husk, bamboo, and kusha grass, have long been part of cultural and economic landscape of Salooni (Photo Plate 1.4). Crafts such as weaving, embroidery, wood carving, and pottery not only preserve heritage but also offer sustainable livelihood opportunities. Their promotion through tourism especially during festivals and fairs has helped create niche markets and increased demand for handmade products. Handicrafts are increasingly becoming a source of supplementary income for rural households. During the field survey, it was observed that families, particularly women, produce items like sitting mats, ropes, baskets, and woollen goods using local materials. Women's participation is especially notable through Self Help Groups (SHGs) under the National Rural Livelihood Mission, which facilitate product sales in weekly markets and build entrepreneurial capacity. These activities promote both environmental sustainability and social inclusion. For women, in particular, handicrafts provide a pathway to financial independence, skill development, and community engagement. With greater market access and institutional support, this sector holds strong potential for advancing women-led green livelihoods in Salooni.

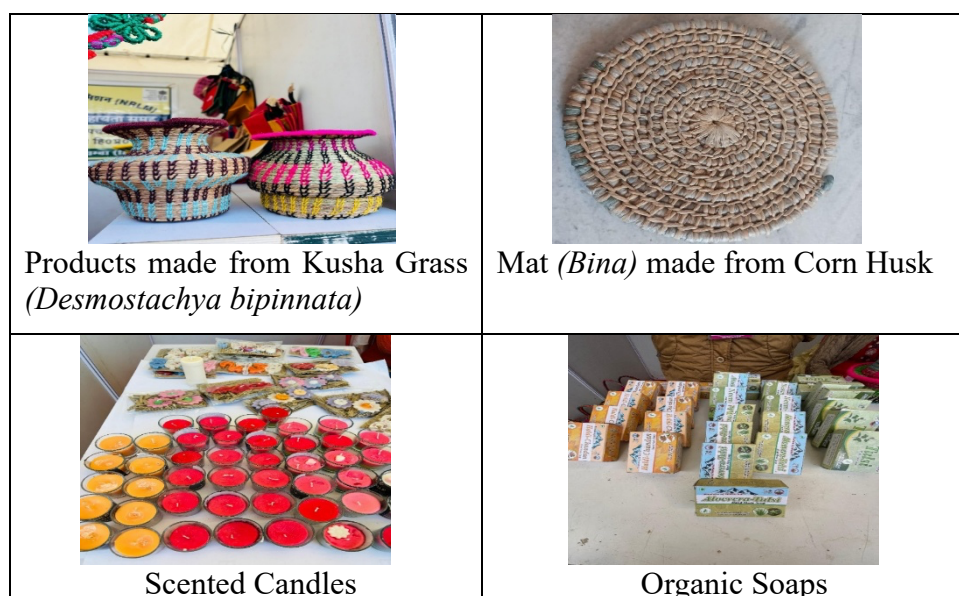


Figure 5 : Handicraft Products

Source: Clicked by Researcher during field survey, 2024

Tourism

Tourism in the Salooni region including eco, agro, adventure, and cultural tourism holds significant untapped potential. The natural beauty of the region, combined with cultural festivals, traditional cuisine, and village life, can attract domestic and international tourists. According to local respondents, traditional fairs like Nag Jatar, Triundi Mata Jatra, and Gadh Mata Jatra are held annually, with participation from every household in the region. These festivals offer tourists a unique opportunity to witness and engage with regional customs, including traditional dances, religious rituals, and centuries-old cultural practices. Highlighting the role of agro-tourism, a government official noted: *“While serving in Salooni, I witnessed the difficult living conditions of the people. To address this, the government introduced the Green Gold Mission, which aimed to diversify livelihood options by promoting the cultivation of high-value cash crops.”* This initiative not only supports sustainable income generation but also opens avenues for integrating agriculture with tourism, thereby enhancing the overall rural economy.

SWOT Analysis of Sustainable Livelihood Options in Salooni Block

The SWOT analysis of sustainable livelihood options in Salooni Block highlights how locally available natural and human resources can be effectively utilized while addressing existing constraints and external challenges. This approach aligns with the sustainable livelihoods framework, which emphasizes the interaction of assets, vulnerabilities, and institutional support systems (Robert Chambers & Gordon Conway, 1992; Food and Agriculture Organization, 2018). It further facilitates a holistic understanding of livelihood dynamics by integrating socio-economic and environmental dimensions into the analysis (Table).

Strengths: Salooni Block possesses significant natural and cultural strengths that support sustainable livelihoods. The region’s rich biodiversity, including medicinal herbs, forest produce, and fertile agricultural land, provides a strong base for activities such as organic farming and beekeeping. For instance, the availability of diverse flora supports high-quality honey production, which can be marketed as an organic product. Additionally, traditional ecological knowledge enables communities to sustainably manage natural resources (United Nations Development Programme, 2015). The scenic Himalayan landscape also enhances

opportunities for eco-tourism, including homestays and nature-based tourism, which are increasingly promoted under state development initiatives. Furthermore, the strong sense of community participation and indigenous practices fosters resilience and supports the long-term sustainability of livelihood strategies in the region.

Weakness: Despite these strengths, several internal limitations restrict livelihood expansion. Poor infrastructure, including weak road connectivity and lack of storage facilities, limits access to broader markets, forcing producers to sell at lower prices. For example, perishable agricultural products often face post-harvest losses due to inadequate cold storage. Additionally, lack of training in value addition, branding, and packaging restricts income potential from local products. Migration of youth due to limited employment diversification further weakens the local economy (Food and Agriculture Organization, 2018).

Opportunities: The region offers multiple opportunities to strengthen sustainable livelihoods through external support and emerging market trends. Eco-labeling and geographical indication (GI) tagging of local products such as honey, herbs, and handicrafts can enhance their market value. Promotion of homestays, local cuisine, and guided cultural tourism aligns with rural tourism strategies encouraged at national and state levels (Government of Himachal Pradesh). Furthermore, capacity-building initiatives for women's self-help groups (SHGs) and the use of digital platforms for marketing can significantly improve income generation (United Nations Development Programme, 2015).

Threats: External challenges pose risks to the sustainability of livelihoods in Salooni Block. Climate change impacts, such as erratic rainfall, landslides, and water scarcity, directly affect agriculture and tourism. Unregulated tourism may lead to environmental degradation and cultural dilution if not managed sustainably. Overexploitation of forest resources without proper conservation measures can threaten biodiversity. Additionally, dependence on external funding and weak institutional coordination among stakeholders can hinder long-term development outcomes (Food and Agriculture Organization, 2018; United Nations Development Programme, 2015).

Table 1: SWOT Analysis of Sustainable Livelihoods in Salooni Block

Strengths	Weaknesses
• Rich biodiversity and abundance of natural resources (forests, herbs, streams, fertile land) • Traditional knowledge and community familiarity with resource use and conservation. • Scenic landscape suitable for eco, agro, and adventure tourism. • Growing interest in organic farming, herbal products, and eco-tourism. • Support from NGOs and local governance structures.	• Limited infrastructure for transport, storage, and processing. • Poor market linkages and limited access for fair pricing. • Seasonal constraints on agriculture and tourism and natural hazards vulnerability. • Lack of training in value addition, branding, and packaging. • Youth migration due to lack of employment diversification.
Opportunities	Threats
• Scope for eco-labeling, Geographical Indication tagging, and branding of local products (e.g., honey, herbs, handicrafts, maize).	• Risk of overexploitation of natural resources without sustainable harvesting practices. • Climate change impacts such as erratic weather, landslides, and water scarcity.

• Promotion of homestays, local cuisine, and guided cultural tours. • Training and support for women-led SHGs and cooperatives. • Policy support for green livelihoods under climate adaptation and rural development programs. • Integration of digital platforms for marketing and e-commerce.	• Cultural dilution and environmental degradation due to unregulated tourism. • Dependence on external funding and lack of long-term local investment. • Institutional gaps in coordination among stakeholders (Government-NGO-community).
Source: <i>Compiled by Author</i>	

Discussion

The study conducted in Salooni Block of Chamba District, Himachal Pradesh, brought forth several critical insights regarding local livelihood patterns and the potential for integrating green and sustainable approaches. The discussion of these findings highlights the need to address a paradox prevalent in many Himalayan regions: ecological abundance coexisting with economic underdevelopment. The sustainable livelihoods framework, which emphasizes the optimal use of five capital assets natural, human, social, financial, and physical shows that while Salooni has a strong natural capital base, other forms of capital are severely underdeveloped. Promoting green livelihoods through sustainable agriculture, forest-based enterprises, and eco-tourism offers a feasible strategy to bridge this gap. Such an approach aligns well with the Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 15 (Life on Land). Furthermore, the relevance of Sustainable Mountain Development (SMD) becomes critical in this context, as the region's fragility demands context-specific and community-sensitive interventions. The study also emphasized the rich traditional knowledge of local communities particularly elders regarding medicinal plants, agricultural practices, and ecological management, which remains inadequately documented or utilized. The systematic documentation, validation, and integration of such indigenous knowledge systems with scientific approaches can significantly strengthen adaptive capacity and promote contextually grounded sustainable development outcomes. Furthermore, institutional mechanisms must be developed to ensure the preservation and intergenerational transmission of this valuable knowledge base.

Conclusion

The research clearly establishes that local resource-based and sustainable livelihoods hold immense potential for transforming rural economies in the North-Western Himalayas. In Salooni Block of Chamba District, activities such as beekeeping, horticulture, handicrafts, and forest-based enterprises when integrated with traditional knowledge and modern techniques offer viable, green livelihood options. These are especially beneficial for women, youth, and marginalized communities. The diversified use of natural resources forests, farms, flowers, and crafts backed by institutional support, community participation, and capacity-building, can form the foundation of a resilient, inclusive development. While challenges such as market access, infrastructure gaps, and climate vulnerabilities persist, initiatives by SHGs, NGOs, and government schemes are showing good results. A SWOT analysis of the region underscores both its rich potential and the need for a context-specific, bottom-up approach. Tourism, if developed responsibly, can further enhance income opportunities while preserving ecological and cultural integrity. To ensure sustainable and equitable development in fragile mountain ecosystems like Salooni, a localized and participatory strategy must replace top-down models. This will not only strengthen rural incomes but also promote inclusive rural development.

Based on the findings from the study of sustainable livelihoods and natural resource management in the Salooni Block of Chamba District, a set of integrated policy recommendations emerges. First, resource-based green enterprises should be actively promoted by supporting local value addition of forest products, traditional foods, and herbal goods through financial and institutional interventions. There is an urgent need to strengthen institutional frameworks that support decentralized planning, capacity building, and participatory governance. Schemes such as Van Dhan Yojana and Startup India must be better aligned with the needs of the region. Eco-tourism should be prioritized by training youth in hospitality, nature guiding, and responsible tourism, while improving eco-friendly infrastructure like trekking routes, signage, and sanitation facilities. Specific support should be extended to women-led and youth-led initiatives to reverse outmigration and empower marginalized sections. Revitalizing traditional knowledge systems and integrating them with modern technologies can enhance resource efficiency and community ownership. Finally, interdepartmental coordination at the district level is crucial to ensure convergence of various schemes, and a comprehensive policy on integrated mountain development should be adopted. These recommendations, if implemented holistically, can transform Salooni into a replicable model for green livelihoods and sustainable resource management in the Himalayan context.

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