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Advancing Sustainable Development in the Hindu-Kush-Himalaya Region Through Certification Strategies

Pugazenthi Dhananjayan[1*], Pooja Koirala[2], Deepshikha Sharma[2]

[1] Adapting and Transforming Livelihoods and Economies, International Centre for Integrated Mountain Development (ICIMOD), 3226 Kathmandu, Nepal
[2] Strengthening Global Leadership, International Centre for Integrated Mountain Development (ICIMOD), 3226 Kathmandu, Nepal

[*] Correspondence: Pugazenthi Dhananjayan (pugazenthi.dhananjayan@icimod.org)

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Abstract: This study investigates the potential of certification as a driving force for sustainable development in the Hindu-Kush-Himalaya (HKH) region, characterized by its unique high-altitude ecosystems, rich biodiversity, and susceptibility to climate change. Focusing on small and medium-sized enterprises (SMEs) within the tourism, renewable energy, and agriculture sectors, the research emphasizes their critical role in the region's economic growth and livelihoods. Nonetheless, the implementation of certification in the HKH region encounters several obstacles, including constrained resources, regulatory barriers, financial accessibility, and limited marketing capabilities. By examining certification initiatives in Bhutan and Nepal, such as organic certification and energy labeling, this study elucidates the advantages and challenges associated with both mandatory and voluntary certification schemes. To address these concerns, the establishment of an HKH Standards and Certification Council is proposed. This Council would facilitate the development and adoption of credible certification and accreditation processes, thereby promoting sustainability and energy efficiency throughout the region. By supporting SMEs, fostering collaboration, and ensuring the relevance, accessibility, and efficacy of standards for small businesses, the HKH Standards and Certification Council could significantly contribute to the sustainable development of the HKH region.

Keywords: Product certification; Mountain products; Standardization; Sustainable livelihoods; Hindu-Kush-Himalaya

1. Introduction

Standards play a crucial role in ensuring the quality, reliability, and safety of materials, products, processes, and services, because they provide a set of agreed-upon criteria to measure, evaluate, and compare the performance of entities. Standards help ensure that products and services are fit for their intended purposes, and promote consistency, interoperability, and compatibility across different industries and sectors (ISO, 2022). International Standards Certification (ISC) improves firms' efficiency and sales performance through efficiency gains and quality signaling, with greater effects observed in countries with weaker market supporting institutions (Goedhuys & Sleuwaegen, 2013). In recent years, there has been a growing demand for environmental certification schemes, standards, accreditation systems, and tools, because businesses and consumers increasingly seek to reduce their environmental impact and promote sustainable practices. These initiatives aim to establish clear and consistent criteria for measuring the environmental performance of products, services, and processes, help cut through the greenwash and provide consumers and decision-makers with credible information and guidance. However, not all certification schemes are created equal, and some are more rigorous and transparent than others. Some organizations may create their own rating labels, which can be misleading and confusing for consumers. Therefore, it is essential to use recognized and reputable certification schemes backed by independent and accredited certification bodies. Mcdermott et al. (2008) proposes an analytical framework to compare certification standards

and government policies based on their policy approach and environmental threshold requirements. This framework enables research into the specific policy components, including management requirements and monitoring/enforcement aspects, that drive tangible on-the-ground changes.

Most certification programs are geographically organized, with the majority implemented within individual countries. They utilize either process standards, such as management systems of the International Standardization Organization (ISO), or performance standards with concrete benchmarks.

According to the International Trade Centre (ITC) Standards Map (ITC, 2017), there are over 246 voluntary sustainability standards worldwide, with a wide range of applications across multiple sectors. Agriculture and food processing account for the largest share of sustainability standards, followed by textile and garments, consumer electronics, and the energy sector. Other sectors, such as services, fisheries, mining, and forestry, are significant in the sustainability standards. Many of these sustainability standards are environmental standards, which focus on waste and water management, followed by biodiversity, soil management, and carbon and climate change. These sustainability standards provide a valuable tool for promoting environmental stewardship, fostering innovation, and driving sustainable development across different sectors and industries. Waldman & Kerr (2014) examined the effectiveness of agrifood certification and supply chain standards in driving changes to meet social goals, particularly in commodity crops. Their findings indicate that implementing certification schemes to address agricultural pollution is impractical due to the complex nature of production, distribution, and consumption in the agri-food industry. They concluded that encouraging the adoption of industry standards requires a combination of strategies.

The HKH region, often called the Third Pole, is one of the critical regions for the planet's climate and biodiversity. Covering an area of four million square kilometers and spanning eight countries, the region is vital in ensuring a climate-resilient and carbon-neutral future for the world. The high-altitude ecosystems are home to the world's largest ice reserves outside of the polar regions, which are vital for sustaining the livelihoods of over 240 million people. The region has four global biodiversity hotspots, significantly contributing to global biodiversity conservation efforts.

Moreover, with ten major Asian river systems originating in the mountains, the region plays a vital role in sustaining food supply of the continent, feeding over a third of humanity. The region's economy is estimated to be worth 4.3 trillion USD annually, and the ecosystem services sustain the livelihoods of over 1.65 billion people downstream. However, the region is highly vulnerable to the impacts of climate change. Warming climate leads to rapid melting of glaciers, threatening the region's water resources and the ability to sustain its large population. Climate change also exacerbates natural hazards, such as floods and landslides, which have severe economic and social consequences.

Given the vulnerability of the region, it is crucial to address the livelihoods of the people living in the region. Climate-resilient solutions and a zero-emission economy are vital for the region's sustainable development. One way of sustainable development in the region is to focus on the role of mountain enterprises in creating jobs and driving economic growth. SMEs in the region, such as tourism and organic farming, are essential sources of employment and income for people living in the mountains, and have the potential to drive economic growth while simultaneously contributing to sustainable development. Forest in the mountains also requires certification. Acharya & Karki (2019) concluded in their case study that forest certification is favorable from both socio-economic and governance standpoints and serves as a means to enhance local value addition, generate income, and create employment opportunities.

Additionally, forest certification plays a positive role in promoting sustainable resource management by raising awareness of improving forest product collection, maintaining records, and ensuring transparency throughout the process. At the same time, it reduces negative environmental impacts by facilitating rural poverty reduction, and improves governance of community forest management and local businesses. Hence, it is of utmost importance to acknowledge that the growing endeavors towards certification can positively improve natural resource governance and sustainable resource management. Moreover, this progress creates opportunities for the international trade of Medicinal and Aromatic Plants (MAPs) as well as Non-Timber Forest Products (NTFPs).

Standardization and certification play a crucial role in making the SME sector in the region more robust and resilient. By adopting standardized practices, SMEs improve their competitiveness, increase market access, and attract investment. Certification also helps SMEs demonstrate their commitment to sustainability and climate resilience, attracting environmentally conscious consumers and investors. Wiengarten et al. (2016) examined the collective influence of ISO 9001, ISO 14001, and OHSAS 18001 certifications on perceived performance in quality, environmental, and occupational health, and safety dimensions. The study found that companies holding all three certifications demonstrated superior environmental and occupational health and safety performance compared to companies without multiple certifications. Table 1 indicates the number of ISO-certified companies in the electricity sector in HKH countries, with China ranking first and India second. The table also indicates how far other countries need to align to ISO processes. Although certification programs all share these common components, they are distinguished by whether they use a process or performance methodology and by the sector of the industry they cover.

Bhutan has standards and certifications for MSME, including food, textile, tourism, and energy sectors. In 2010, the Bhutan Standards Bureau (BSB) was established as an autonomous organization after the enactment of the Bhutan Standards Act 2010, which aimed to foster and promote standards and standardization activities to develop the national economy, benefit the health, safety, and welfare of the public, assist and protect consumers, protect the natural environment, promote industrial efficiency and development, and facilitate domestic and international trade. BSB is now responsible for coordinating and overseeing all standardization and conformity assessment activities in the country. According to the Bhutan Standards Act 2010, the BSB is a legal identity with full financial support from the Royal Government of Bhutan, and is implementing a product certification scheme (PCS) as per the International Standard ISO/IEC 17065: 2012 (ISO, 2012).

Similarly, the most dominant sectors are SMEs in India and Nepal, and tourism (green buildings) and renewable energy have the most advanced standards and certification programs. The dominant renewable energy sectors are solar and hydropower projects in Nepal, and are mainly solar, wind, green buildings, and energy efficiency in India. Most of the HKH region is dominated by tourism, renewable energy, energy efficiency, and SME sectors, which are characterized by small firms that cannot easily apply The Eco-Management and Audit Scheme (EMAS) and ISO systems, which are costly, time-consuming, often require outside consultants, and are best suitable for large companies.

Nepal lacks a solid set of specific policies for SMEs and a clear plan to expand into international markets and integrate into global value chains. Large companies are much more likely to possess internationally recognized quality certifications compared with SMEs. Compared with businesses in other regions, Nepali companies of different sizes have significantly less quality certifications recognized globally (Kharel & Dahal, 2020).

Organic certification of local underutilized mountain crops is minimal, such as beans, buckwheat, naked barley, cold tolerant rice, millet and amaranth. Underutilized traditional crops are sold as self-labeled organic products instead of formally certified ones. Sales and export of organic-certified products are mainly high-value cash crops, such as coffee, tea and cardamom. The demand for organic certification is gradually increasing in Nepal, though it is in the early stage (Bhat, 2009), which is similar to other HKH countries. Producers and traders have limited knowledge of organic certification process, procedures and access, which is a critical challenge. Other challenges involve the complicated certification process, limited institutional capacity, and lack of technical testing support (Gauchan et al., 2020).

Table 1. ISO-certified companies in the electricity sector in the HKH countries

	ISO 9001	ISO 14001	ISO 27001	ISO 45001	ISO 50001	ISO 37001
Afghanistan						
Bangladesh	14	9				
Bhutan		1				
China	520	500		473		
India	150	147		115	56	1
Myanmar						
Nepal						
Pakistan	7	13	1	4	4	

Source: (ISO, 2021)

1.1 Review of Existing Certification in Bhutan and Nepal

Bhutan highlights the potential benefits of mandatory certification for green businesses, and requires all tourism-related businesses to comply with standards and regulatory guidelines set by the Tourism Council of Bhutan (TCB), thus ensuring that the businesses operate in an environmentally responsible manner. This not only helps protect the natural and cultural heritage of the country, but also contributes to its reputation as a sustainable tourism destination. Tax benefit waivers and fiscal incentives also help incentivize compliance and encourage more businesses to adopt sustainable practices.

However, it's important to note that mandatory certification may not be feasible or appropriate for all HKH countries or all types of green businesses. For instance, there is a large number of small and informal businesses in countries like Nepal and India, where it can be challenging to implement mandatory certification. In this case, voluntary certification may be a more practical approach, and countries can encourage more businesses to obtain this certification with incentives like tax benefits and government schemes.

Regardless of whether certification is mandatory or voluntary, it's important that standards and guidelines are developed in consultation with stakeholders, including small businesses, thus ensuring that the standards are relevant and appropriate for the local context and are designed to support their growth and development. Additionally, capacity building and financial support should be provided to small businesses to help them meet certification requirements and implement new sustainability practices. By taking a collaborative and supportive approach to certification, the HKH region can move towards a more sustainable and resilient future.

1.1.1 Organic certification in Bhutan

Organic certification is becoming increasingly important for both consumers and producers, because more people seek healthier and environmentally friendly products. In Bhutan, organic certification is still a relatively new concept, but it is gaining momentum. The costs for external certification are currently high, and can be reduced by establishing a National Certification Agency, making it more accessible for farmers and community groups.

The farmer's group in Khatoed geog, Gasa, is a positive example, which shows that Bhutan has started to establish a robust organic certification system, including inspections and testing of soil and agricultural produce samples in accordance with the Bhutan Organic Certification System (BOCS) Guidelines (BAFRA, 2013). It has been found that the soil and agricultural produce samples tested are within the permissible limits of the Guidelines, indicating that farmers have produced safe and healthy organic products.

The certification logo issued to the farmers' group contains a Unique Identity Number (UID), assigned to every member for traceability and future compliance, which helps consumers easily identify and trace the products, thus giving them greater confidence in the purchased products. Organic certification is crucial for supporting niche communities to grow SMEs and cater to a larger customer base, which significantly impacts the livelihoods of these communities, because they can earn more and benefit from increased demand for organic products. Overall, certification of the farmers' group is a positive development, and shows that progress has been made towards establishing a robust organic certification system to benefit farmers and consumers. It is important for the government to continue to support the organic agriculture sector by providing necessary infrastructure, resources, and policies.

1.1.2 Energy labeling in Nepal

Energy labeling is an essential tool for conveying information to consumers about the energy performance of appliances (Egan & Wade, 2005). More than 60 countries had implemented standards and labeling programs for energy-consuming equipment by 2008 (McNeil et al., 2008), which covered more than 80 categories of products worldwide. There is no mandatory or voluntary labeling scheme in Nepal now, though some imported products have efficiency labels, such as ENERGY STAR and BEE star labels, which are not linked to Nepal's green recovery inclusive development policy or climate targets. Energy efficiency is currently considered as a issue for producers rather than consumers. However, with solar water heating and solar photovoltaic (PV) systems becoming popular, Nepal is moving towards promoting renewable energy at the household level, and has implemented mandatory policies of installing solar PV systems with subsidies and financial policies.

Currently, there is no green labeling system for products or services in Nepal, but international standards and labeling can be adopted, such as ISO 14000 standard certification and Eco-mark (NEEP, 2015). Initiatives need to be taken to certify products and services available within the country. Indian literature has been adopted as references for no extensive study and regulations in Nepal, because the climatic conditions are similar in both countries, and many products are imported from India. In the mountain context, it is necessary to establish a HKH Standards and Certifications Council, a credible certification body, and an accreditation body as a benchmark for green businesses, thus promoting sustainability and energy efficiency in the region and encouraging the adoption of green technologies and practices.

2. Challenges

Although certification programs for environmental and sustainability standards are becoming increasingly important in the HKH region, several issues and the standardization and certification process gaps need to be addressed (Sanabria et al., 2003). This section delved into key challenges faced by SMEs in obtaining certification while highlighting the need for a comparative perspective for the HKH region.

2.1 Limited Resources and Family Ownership

In the HKH mountain region, a significant number of businesses are family-owned, which pose challenges in implementing new environmental standards and practices, because these businesses often have limited resources and may lack the capacity to invest in sustainability initiatives. For instance, the upfront costs associated with sustainable practices, such as upgrading equipment or adopting renewable energy, strain the limited financial resources of small businesses. A study conducted in Nepal found that family-owned SMEs faced difficulties in allocating funds for sustainability measures due to limited capital, which illustrates this challenge (EEC, 2020).

2.2 Sectoral Differences and Country-Specific Barriers

A more nuanced analysis is necessary to recognize the differences across sectors, certification types, and country scenarios. Challenges faced by tourism SMEs may differ from those encountered by Agri-based ones. For instance, tourism SMEs might struggle with waste management and energy efficiency, while Agri-based ones face

challenges related to water use and sustainable farming practices. Additionally, policy barriers vary between countries within the HKH region. For instance, India might have different regulatory requirements compared with Nepal, which impacts the implementation of sustainability standards. It is crucial to understand these nuances in order to tailor interventions effectively.

2.3 Partnerships and Collaborations

Partnerships and collaborations, such as public-private partnerships, donor collaborations, and local community engagement, are pivotal in addressing challenges faced by SMEs in the HKH region. For example, governments can collaborate with certification bodies by providing financial incentives or subsidies to SMEs for implementing sustainability practices. Community engagement programs can raise awareness and provide capacity building support to SMEs. A successful example is the partnership among a local Non-Governmental Organization (NGO), the government, and tourism SMEs in Bhutan, where joint efforts were made to develop sustainable tourism practices (Kharel & Dahal, 2020).

2.4 Government Regulation

Another issue is the impact of government regulation on small businesses in the region. Regulations designed to promote sustainability and environmental protection sometimes create barriers for them. For example, regulatory requirements related to waste management and pollution control can be costly to implement, creating challenges for small businesses with limited resources.

2.5 Access to Finance

Access to finance is another issue faced by small businesses in the HKH region. Many small businesses have limited access to financing options, which makes it difficult for them to invest in sustainability initiatives and achieve certification.

2.6 Marketing Capacity

Marketing capacity is also a significant issue for small businesses in the region. Many of them lack the resources and expertise to effectively market their products and services, making it difficult to compete against larger firms. Finally, there is a lack of access to discussions on setting standards, because small businesses in the region often lack the knowledge and resources to participate in discussions on the development of sustainability standards and certification programs, making it difficult for them to stay up-to-date on new developments and initiatives.

Overcoming those challenges can pave the way for more rapid certification of SMEs. Therefore, it is crucial to strengthen specific access to finance options to support SMEs in implementing sustainability initiatives and achieving certification. Additionally, it is essential to foster specific support programs to address the unique challenges faced by SMEs in different sectors, such as tourism, agriculture, and manufacturing. Cross-country knowledge sharing and learning platforms can facilitate the exchange of best practices, experiences, and case studies. It is vital to promote inclusive participation of SMEs in discussions on setting standards and regulations, thus adequately representing their needs and perspectives.

Furthermore, it is necessary to enhance collaboration between governments, certification bodies, NGOs, and local communities, thus providing comprehensive support to SMEs, including financial assistance, technical expertise, and marketing resources. By implementing these recommendations, SMEs in the region can be certified more rapidly, thus fostering sustainable growth and contributing to environmental well-being. Mountain-specific businesses can save cost by implementing better environmental practices, which in turn helps them offset the certification cost. This assumption needs further testing. The Enterprise Survey (World Bank, 2020), which surveyed more than 500 industries (cottage, small and medium industries), identified some of the major constraints, such as access to finance, hiring of foreign workers, transport infrastructure, and low skills of workers. Support for an environmental scheme in the HKH region needs to be carefully considered, because environmental certifications have benefits and challenges for both certified businesses and certification providers.

Addressing the challenges faced by SMEs in the HKH region regarding certification is crucial for their growth and development. A comprehensive understanding of these challenges, tailored interventions, and collaborative efforts involving partnerships and engagements can enable SMEs to adopt sustainable practices, achieve certification, and contribute to the overall socio-economic and environmental well-being of the region.

3. Recommendations

3.1 Establishing an HKH Standards and Certification Council

As one of the most biodiverse areas in the world, the Himalayan region plays a vital role in the region's

ecological, social, and economic systems. However, rapid urbanization, population growth, and increased tourism have led to environmental degradation, including the loss of forests, water resources, and wildlife habitats. Hence, it is necessary to establish an HKH Standards and Certification Council to promote sustainable development practices in the region. In their study, Font et al. (2003) examined the viability of establishing a Sustainable Tourism Stewardship Council aimed at elevating the standards of sustainable tourism and ecotourism certification programs. The proposed feasibility study outlines three sequential phases: Networking, Association, and Accreditation, which encompass joint marketing efforts, training initiatives, and information sharing to enhance sustainable tourism practices.

One of the main reasons for establishing the Council is to verify and continually improve sustainable practices in the region, because the Council can create credible and transparent certification programs employing best practices different from less environmentally and socially responsible ones, thus ensuring environmentally friendly and sustainable operation of the businesses while promoting social well-being.

Another reason for establishing the Council is to assess standards, certifications, and frameworks for building green products and services in the region, because the Council can promote recognized HKH-specific certification programs to raise standards and benefits of sustainable green products and certification. Such certification programs demonstrate the commitment of these businesses in the region to conserving nature, reducing emissions, and fostering social well-being. The region can ensure equitable access to HKH-specific national and regional certification programs.

A protocol strategy needs to be developed to establish the Council, by focusing on building consensus and improving the performance of green products and certification programs towards mountain-specific standards before accrediting the programs, thus ensuring that the certification programs meet the unique environmental, social, political, and economic conditions of the region.

Tourism and SMEs in the region also benefit from the Council, because voluntary and independent certification programs demonstrate their commitment towards conserving nature, reducing emissions, and fostering social well-being, and provide them with guidelines for improving their environmental and social performance, thus contributing to overall sustainable development. The following steps should be considered to successfully establish the Council:

3.1.1 Developing a sustainable and financially viable model for establishing and maintaining an accreditation organization

Before establishing the Council, it is imperative to comprehensively analyze the certification demand for industry and market, which serves as the foundation for developing a sustainable and financially viable model for the accreditation organization, by addressing the needs of businesses and ensuring that the Council's services add significant value.

The analysis should encompass several key aspects. First, it is crucial to identify the specific sectors and industries with high certification demand, including tourism, SMEs, renewable energy, and energy efficiency. Then efforts can be made by developing HKH-specific standards and certification frameworks directly catering to their needs. Furthermore, it is essential to recognize the challenges faced by the businesses when obtaining certifications, including high costs, complex application processes, lack of awareness of available certifications, or limited resources for implementation. Then the certification process can be tailored to address these challenges effectively, making it more accessible and feasible to pursue certification.

Second, the analysis should identify the tangible benefits of certification to businesses, including improved market competitiveness, brand reputation and consumer trust, access to new markets, funding opportunities, and compliance with legal and regulatory requirements, thus incentivizing the businesses to actively seek certification, and aligning the Council's efforts with their priorities and objectives.

Finally, a comprehensive financial model should be developed to ensure the long-term sustainability of the accreditation organization, by considering the costs associated with establishing and maintaining the Council, including administrative expenses, certification processes, training and capacity building initiatives, and marketing and outreach efforts. Potential revenue streams should also be explored, such as certification fees, partnerships with relevant stakeholders, or funding from government or donor agencies. By carefully assessing the financial aspects, the accreditation organization can operate effectively and remain financially viable in the long run. Overall, a thorough analysis of certification demand for the industry and market is crucial in shaping the development of the Council, by understanding the specific needs, challenges and potential benefits for businesses, and a sustainable and financially viable model can be created, which effectively meets the demands of the region while supporting the growth of sustainable practices.

3.1.2 Harmonizing criteria, standards, and methods among different certification programs

It is imperative to harmonize criteria, standards, and methods across the region, by providing comprehensive training for institutions, NGOs, and government regulatory bodies involved in certification processes, thus ensuring the effective development of the Council.

The training aims to raise awareness of the significance of harmonization and the benefits of obtaining an HKH-specific certification program. Participants should clearly understand that harmonization can contribute to the region's sustainable development goals, promote consistency and credibility, and facilitate cross-border trade and collaboration. These training initiatives should focus on building the capacity of key stakeholders to effectively develop and implement harmonized certification programs, including necessary knowledge, skills, and tools to establish consistent criteria, standards, and methods that align with HKH-specific environmental, social, political, and economic conditions.

Particular attention should be given to capacity building in standardization, assessment methodologies, auditing processes, and quality assurance. Participants should have the expertise to evaluate and assess the compliance of businesses with certification requirements, thus ensuring the credibility and transparency of the certification process. Institutions, NGOs, and government regulatory bodies should collaborate and share knowledge through interactive workshops, seminars, and forums, which facilitate the exchange of best practices, experiences, and lessons learned, thus promoting a collective understanding of the challenges and opportunities associated with harmonization.

Additionally, partnerships with international organizations, experts, and certification bodies with experience in harmonization processes greatly enhance the effectiveness of the training, and ensure that the capacity building initiatives are comprehensive, up-to-date, and in line with global best practices. The training should be continuously monitored and evaluated to assess its effectiveness and identify areas for improvement. Feedback from participants and the outcomes achieved from improved harmonization practices should be considered when refining and enhancing the capacity building initiatives.

The Council can effectively promote consistent and credible certification practices across the region through the comprehensive training focusing on harmonization and capacity building, resulting in increased trust and sustainable practices and improved market access for businesses in the Himalayan region.

3.1.3 Establishing certification schemes for crucial sectors, and developing a framework for HKH-specific green businesses

The HKH Standards and Certification Council is crucial for effective implementation and harmonization of certification schemes across key sectors, such as tourism, SMEs, and renewable energy and energy efficiency (RE&EE).

Establishing tourism certification schemes involves identifying and analyzing various international, regional, and national frameworks that promote sustainable tourism practices, including assessing certifications like the Global Sustainable Tourism Council (GSTC) criteria, Earth Check certification, and various eco-labels specific to different countries or regions. By understanding the existing certification schemes, the Council can align and adopt the most relevant and effective frameworks for the Himalayan region.

SMEs can identify, evaluate and choose suitable certification schemes, including ISO 9001 (quality management system), ISO 14001 (environmental management system), ISO 26000 (social responsibility), and industry-specific certifications like Fairtrade or Organic certifications. The Council can provide guidance for them about obtaining these certifications to enhance their competitiveness, sustainability, and social impact.

In the RE&EE field, establishing certification schemes involve assessing various international and national frameworks related to renewable energy technologies, energy efficiency measures, and carbon emission reductions, including ISO 50001 (energy management system), Leadership in Energy and Environmental Design (LEED) certification, and regional or national energy efficiency labeling programs, thus facilitating the Council to adopt best practices and developing a sustainable and low-carbon energy sector in the HKH region.

Overall, establishing certification schemes in sectors like tourism, SMEs, and RE&EE lays a foundation for the Council to promote sustainability, quality, and responsible practices across these key areas. By identifying relevant frameworks and promoting their implementation, the Council can contribute to the overall development and well-being of the HKH region. This framework helps ensure that businesses in these sectors meet the necessary environmental and social responsibility standards.

3.1.4 Assessing and accrediting various certification programs against specific criteria

The long-term strategy of establishing the Council involves the accreditation of various certification programs. The Council is responsible for developing and implementing accreditation standards, which aims to ensure that the certification programs align with the region-specific certification frameworks.

By implementing this accreditation process, the Council makes the certification process more credible, reliable, and transparent, thus assuring consumers, businesses, and stakeholders that the certified products or services meet rigorous environmental, social, and quality standards specific to the HKH region. This can promote consumer confidence, facilitate market access for certified products and services, and encourage responsible business practices.

The Council's accreditation process involves a thorough assessment of certification programs against the established criteria, including the program's conformity to HKH-specific standards, robustness of the certification

process, competence of the certification body or organization, and the program's ongoing monitoring and evaluation mechanisms. Certification programs that successfully meet the accreditation criteria can be accredited and endorsed by the Council.

Furthermore, the long-term strategy includes promoting awareness and understanding of the accredited certification programs among businesses, consumers, and relevant stakeholders, through education and outreach programs highlighting the benefits and significance of choosing certified products and services. The Council works collaboratively with businesses, industry associations, and government agencies to promote the adoption and utilization of accredited certifications.

By implementing this long-term strategy, the Council can play a vital role in promoting sustainable development, responsible practices, and quality assurance across various sectors in the HKH region, and become a trusted authority in assessing and accrediting certification programs, thus fostering regional harmonization and contributing to the overall well-being and resilience of the Himalayan communities.

3.1.5 Establishing and implementing a harmonized set of responsible norms and rules

To ensure consistent certification process, it is crucial to implement standardized regional norms for cross-border businesses operating in the HKH region, because these norms have a harmonized set of responsible rules, which ensures businesses across borders meet necessary environmental and social responsibility standards.

Implementation of standardized regional norms promote a fair and transparent competitive environment for businesses operating in the HKH region, because they should adhere to the same set of norms and face equitable expectations and requirements, thus encouraging responsible practices and facilitating healthy competition among businesses. Standardized regional norms also reduce confusion and inconsistencies in the certification process. Businesses operating across borders may encounter varying certification requirements and procedures now, which can be time-consuming and burdensome. By implementing standardized norms, businesses have a clear understanding of the requirements they need to meet, simplifying the certification process and streamlining their efforts to obtain certification.

Furthermore, standardized regional norms enhance the credibility and recognition of certification obtained by cross-border businesses. Certification complying with a harmonized set of responsible norms brings trust to consumers, investors, and other stakeholders, which enhances market access and provides opportunities for businesses, because their certification can be more readily accepted and valued across the HKH region. Implementation of standardized regional norms requires close collaboration among stakeholders, including government bodies, industry associations, certification bodies, and relevant organizations across the HKH region. Collaborative efforts can reach a consensus on the key principles, criteria, and guidelines that define the standardized regional norms. Regular communication and review are essential to the continued relevance and effectiveness of these norms in a dynamic and evolving business landscape.

It is important to note that the standardized regional norms should complement and align with existing national and international standards and regulations based on established frameworks while addressing specific regional challenges and priorities, thus ensuring that the norms provide added value and support for the sustainable development goals in the HKH region. Implementation of standardized regional norms for cross-border businesses operating in the region is crucial to establish a harmonized set of responsible norms and rules, thus facilitating compliance with environmental and social responsibility standards, reducing confusion and inconsistencies, and enhancing the credibility and recognition of certifications. Through collaborative efforts and alignment with existing standards, the HKH region can create a cohesive and sustainable business environment that fosters responsible practices and promotes the well-being of the region and its communities.

3.2 Focus on Product Standardization

3.2.1 Policy

(1) Favorable policy environment in HKH

Amid a range of environmental challenges, policymakers in HKH have increasingly recognized that economic growth, decent living standards, and environmental sustainability are interconnected. To fill gaps in financing, the private sector needs to invest more both domestically and internationally in environmentally sound practices and technologies in areas, such as clean energy, sustainable transport, green cities, waste management, natural resources management, ecosystem services, biodiversity, and pollution prevention and control.

(2) Strengthening policies

HKH can develop and support voluntary standards because there are few government measures compared with other industry sectors. There is an opportunity to build consensus between governments and agencies and link them to Sustainable Development Goals (SDGs) and Nationally Determined Contributions (NDCs).

(3) Voluntary standards for green businesses & products

Financial incentives and disincentives focus on delivering environmental justice, while voluntary standards for green businesses and products can amplify the process.

3.2.2 Implementation

(1) Establishing the HKH Standards and Certification Council

The idea of the Council attempts to provide a multi-stakeholder partnership approach to resource management, which allows various entities with different interests to engage in collaborative resource management. To fully understand the role of accreditation bodies and stewardship councils, it is pertinent to examine several organizations in detail to assess their strengths and weaknesses and their relevance to the Council. Further analysis needs to be done to examine accreditation bodies further.

(2) Green product certification programs

The post-2020 HKH green product certification programs involve testing international standards, accreditation criteria, and competent assessment guidelines proposed by a technical committee and agreed upon by the members. Creating the Council along with various regional countries enables more businesses in the mountain regions to apply for certification.

(3) Possible accreditation and certification bodies

Certification has reduced transaction costs and improved functioning in a value chain, and can bring positive economic, social, and environmental outcomes. However, high costs, complex standards, and label overload often constrain the transformative potential (Krishnan & Maxwell, 2020). Due to overlapping standards and duplicated industry coverage, the Council has learned a lesson that the lack of harmonized standards in the region adds time and transaction costs to complying with multiple programs and also results in barriers.

To sum up, it is evident that there is a lack of regional or even national accepted standards and criteria for mountain-specific SME sectors, which has led to negative social and environmental impacts. Although most certification mechanisms for green mountain-specific products and services are valid and important, there is a strong need to distinguish certification programs, which certify sustainable practices and investigate GHG reduction, social inclusion, and conservation criteria, from those targeted at mainstream sectors. In addition, this study believes that the fragmentation among the current certification programs contributes to consumer unawareness and confusion, specifically in the HKH context.

4. Conclusion and Way Forward

In conclusion, certification plays a crucial role in promoting sustainable development in the HKH region, which possesses unique ecological assets and economic potential. However, SMEs in the region face challenges in implementing certification schemes due to limited resources, regulatory barriers, and marketing constraints. Nevertheless, Bhutan and Nepal have demonstrated the positive impact of certification in sectors like organic farming and renewable energy, which provides valuable experience for other countries and sectors in the HKH region, by highlighting the potential of certification in several aspects, such as enhancing environmental sustainability, improving product quality, increasing market access, and fostering innovation and competitiveness. It is recommended to establish the HKH Standards and Certification Council to utilize these benefits effectively. The Council can facilitate the development and adoption of credible certification and accreditation processes, ensuring their relevance, accessibility, and applicability for SMEs in the HKH region. By providing support, fostering collaboration, and enhancing energy efficiency, such a council can contribute to the sustainable development and long-term prosperity of the region and its communities.

To harness the full potential of certification, it is necessary to adopt a multi-faceted approach. First, governments in the HKH region should develop and implement supportive policies and regulations to encourage SMEs to obtain certification, including financial incentives, streamlining bureaucratic processes, technical assistance and capacity-building programs.

Second, collaboration among governments, private sector entities, and civil society organizations is crucial. By working together, stakeholders can establish the Council or a similar body as a platform for coordination, knowledge sharing, and harmonization of certification processes. The Council should develop region-specific certification schemes tailored to the unique needs and challenges of SMEs.

Third, it is essential to raise awareness of certified products and build consumer demand for them. Public education campaigns, marketing initiatives, and targeted labeling efforts can help create a market environment where certified products are recognized, valued, and sought after by consumers, thus incentivizing SMEs to obtain certification and create a positive feedback loop for sustainable development.

Finally, it is vital to continuously monitor and evaluate the impact of certification. Certification programs should be regularly assessed to determine their effectiveness, identify areas for improvement, and adapt to changing market dynamics and environmental priorities.

By implementing these recommendations, the HKH region can unlock the full potential of certification to drive sustainable development, protect the environment, and improve the livelihoods of its communities. A more sustainable and resilient HKH region requires collective efforts and a long-term commitment from all stakeholders.

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Data Availability

Not applicable.

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Conflicts of Interest

The authors declare no conflict of interest.

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