

Forum: SDC 1

Issue: Rendering assistance to mountain countries facing obstacles in socio-economic and ecological areas

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Introduction

Mountainous regions or Highland regions make up 24 percent of the world's surface and are home [ja1] to 12 percent of the world's population in 120 countries. More than 281 of all UNESCO World Heritage sites are situated entirely or are partially settled within these mountainous zones, an example being the ruins of the 15th century Inca city, Manchu Picchu. It is precisely due to these heritage sites that mountainous regions have become a hot spot for tourist attraction, with recent reports from the FDFA (Federal Department of Foreign Affairs) Highland regions amassing more than 20% of total tourism worldwide (FDFA), creating an annual turnover of approximately 70 billion USD. However, mountainous regions have been struggling both economically and ecologically. Recognized as vulnerable ecosystems of global importance early in the 1992 UN Conference on Environment and Development held in Rio-reaffirmed at the UN Rio +20 conference in 2012.[ja2] The protection of these mountainous regions has been enshrined within the 2030 agenda for sustainable development, and thus socio-economic support for these regions has become a pivotal issue.

Mountain countries have faced several forms of obstacles in the past decades, whether it be in the form of socio-economic difficulties or ecological ones. Mountainous ecosystems have been the epicentre of major natural crises such as climate change, natural disasters, industrial exploitation, migration (most specifically upland-lowland migration) and mass tourism. These natural and man-made phenomena regularly raise a threat towards entire mountain regions, putting the livelihoods of millions at stake. The retreat of glaciers due to climate change has exacerbated water scarcity in the current and long term. This sensitivity and vulnerability have also led [ja3] to detrimental effects on tourism, which are highly dependent on natural resources in mountain regions. A[ja4] ll o[ja5] f the above are sensitive to climatic changes. Furthermore, many of these mountain communities, particularly within LEDCs (Less [ja6] Economically Developed Countries) face barriers that limit their ability to cope with these climatic impacts due to their lack of economic resources and poor economic situations. Climate change has also severely interfered with the highland population's access to food and resource[ja7] s; as highland populations rely directly on the local water source, soil, flora (plants or any other natural resource) and fauna (natural wildlife), with the influence of climate change lowering these communities' resilience.

In response to these issues, member states have made multiple efforts to resolve the issue. Over the past decade, the SDC (sustainable development committee) has initiated multiple scientific projects in

the Andes, Himalayas and primarily in Central Asia, studying the current [ja8] glacier shrinkage and its impending consequences it has on key partner regions[ja9] . Switzerland, another Highland nation that has been severely affected by the current glacier shrinkage has had key contributions in making the scientific dialogue on climate change. This was done so through the provision of Switzerland's own knowledge and experiences in observing glaciers and their influence on water supply, in the addition of training programs for glaciologists in partnered countries spreading this knowledge and helping member states or highland nations adapt to climate change.[ja10]

Despite these efforts to tackle the issue and provide ecological support, socio-economic issues are still very much prevalent and have become a conflict that must first be addressed to resolve the issue. Particularly, the sudden expansion in human activities in highland areas have had detrimental effects on highland communities, especially in Asia. In an [ja11] investigation done in Asia from 2000-2020, through the combination of earth observation data and socioeconomic data, it was found that 23% of human activity expansions were conducted in Asian Highlands-76% coming from ecological land. Hence, overexploitation of ESs (Ecosystem services) consequently leads to lower economic revenue, which for many of these already ailing communities is already a prevalent issue. To add to this, though tourism serves as a main source of revenue for many mountainous communities, the issue of hidden costs within tourism-notably the exclusion of local businesses.

When drafting resolutions, delegates must note the importance of tourism within the provision of economic support, as it is their main source of income for many poor mountain nations. Furthermore, when providing socio-economic support, ensure that communities cultures are not distorted as socio-cultural changes may occur, further damaging the already fragile livelihoods of these communities. Delegates must also address the issue of climate change as it too is an important factor to take into account.[ja12]

Definition of Key Terms

Highland Countries

According to the official Cambridge dictionary, highland can be defined as a mountainous area, hence highland countries refer to mountainous areas within countries or countries primarily situated within mountainous areas. E.g. Switzerland.

Ecosystem Services

Ecosystems services are defined as direct or indirect contributions of ecosystems to human well-being, along with an impact on our survival and quality of life. Ecosystem services are categorized as follows: provisioning, regulating, cultural, and supporting services.

LEDC (Less Economically Developed Countries)

LEDCs as their name suggests are defined as less economically developed countries, whilst an MEDC (more economically developed country) has a significantly higher standard of living, LEDCs tend to have low standards of living. LEDCs also classify as developing countries, which tend to be in poverty.

Resilience

The USAID defines resilience as a countries ability to mitigate, adapt or recover from shocks and stresses in a manner that reduces the chronic vulnerability, whilst being able to facilitate inclusive growth. These vulnerabilities include the issue of human resources and other social and economic needs.

Socio-Economic

Defined as any issue or factor relating to or concerned with the interaction of social and economic factors. Socio-economic by itself is a branch of economics, primarily concerned with the interplay between social processes or behavior and economic activity within societies.

Socio-Cultural

Defined as the combination of both social, and cultural factors. It is a collection of social factors affecting social traditions, values, beliefs, level of literacy, education and other factors.

Ecology

Ecology relates to the branch of biology and a field of study of the interaction of organisms with one another and with their physical environment. According to ecology, the distribution along with the abundance of organisms are shaped by both biotic and abiotic factors.

Background Information

Addressing the need for investment in technological and economical improvements to boost communications infrastructure

Amongst the [ja13] issues of access to natural/human resources and energy availability, communication has been a key issue in the sustainable development of mountain areas. Through our experience in supporting mountain changes, it has been shown time and time again that communication amongst other factors are very powerful agents of change, often involved in vital linkages between regions and adjacent lowlands, other centers of population, and industrialized and urbanized areas. Hence, the importance of consistent change. [ja14]

Contrary to their isolative methods, mountains, or more specifically, mountain communities have always depended on various forms of exchange and trade with lowland communities or their surrounding areas. To provide for their communities, leading to the existence of long-established markets in mountains, including ecological areas dominated by subsistence mountain agriculture. Furthermore, in a similar sense, transit routes across mountains have existed since ancient times to better achieve the provision of resources. With the advent of industrialisation, the creation of railways and roads, drawing[ja15] mountain communities [ja16] into better networks of access, transits, and communications. However, several issues directly link to this increase in accessibility. Particularly, the subject of brain drain has been a prevalent issue. Despite better communications, many mountain areas, particularly in Europe, have experienced a demographic decline due to lack of attractiveness[ja17] . Though the opening and exposure of mountain areas have further attracted the awareness of many, particularly young individuals, with a study showing 66% of young adults in Europe showing interest in migrating to these mountain communities, several authorities have exclaimed a struggle in their search for employment qualifications. Particularly, the dominance of tourist services and other agricultural sectors within the economy has led to individuals lacking the qualifications for other jobs outside the agricultural and tourism sector. Pushing young individuals towards much more urban areas to seek other forms of occupations outside the tourism or agricultural industry.[ja18] Building upon the interdependence of tourism, tourism remains a large proportion of mountain countries' economies. Due to tourism's importance, more mountain countries have invested more into these sectors rather than other sectors.[ja19] This leads to a lack of diversification in job opportunities, subsequently leading to the current issue of brain drain. [ja20]

On the other hand, means of mass transportation such as railways, roads, etc. Have negatively impacted the environment, leading to overexploitation of resources. A notable case of this would be mining. Within the eastern slopes of the Peruvian Andes, roads were used to facilitate the demand for gold and timber since the early 1990s. The boom only made possible through the importation of over 1000 pieces of machinery,[ja21] which subsequently led to extensive damage to the nearby rainforests. Furthermore, the completion of a transoceanic highway between Peru and Brazil across the Andes have increased present levels of overexploitation and destruction of forests.

In terms of communication, modern technologies such as the internet have become increasingly important to link institutions and personalities that are interested in aiding mountain development. However, this linkage and exchange of information are still severely affected by the digital divide. During communications, many communities, peoples, and institutions in mountains are still excluded from access to these technologies, particularly in LEDC nations due to the lack of requisite infrastructure or telephone connections, in addition to the high initial costs for the purchase of said equipment such as personal computers.[ja22] At the time mountain countries had very confined and limited access to the internet, often confined to the capital and a limited number of large towns, the[ja23] number of lines were also very

low. This digital divide was best illustrated in LEDCs' inability and unpreparedness towards the digital world — an uneven connectivity within groups resulting in many people and businesses within both LEDCs and Mountain nations unable to avail themselves of high-speed networking for remote learning, access to e-government services and online shopping. [ja24] Despite the UN's constant and deliberate emphasis on SDG 9c, aiming specifically at digital connectivity in LEDCs, a report done in 2020 [ja25] showed that more than two dozen LEDCs including mountain [ja26] nations have not met this target (UN,2021).

Highlighting the impacts of Mountain Tourism: Socio-economic, Socio-cultural impacts

According to a recent study, more than 475 protected areas exist within 65 countries within highland areas, covering more than 264 million hectares. With more than 140 of these mountain areas being designated as biosphere reserves by UNESCO (United Nations Educational, Scientific and Cultural Organization). Tourism has always been an important sector for many developing mountain economies, being the world's [ja27] largest service sector industry, amassing a global turnover of 444 billion USD (Vlatko Andonovski). In mountain nations, tourism as mentioned is an important industry and one heavily invested upon. Particularly in Western Europe, highland areas have been massive destinations for equally massive tourism, resulting in high volume and high output. In Austria, tourism contributes to more than 4% of the GDP (Gross domestic product)[ja28] with the annual per capita income being 1731 Euros as recorded in 2011. However, that amount has fallen to 925 Euros, whereas the percentage of GDP rose to 13%.

Despite its economic importance, tourism also brings forth an array of socio-economic and socio-cultural issues. Tourism by itself directly are [ja29] very dependent on customers, this interdependence on customers tends to lead to unfavorable situations. This was exemplified through the COVID 19 crisis back in 2019, where the pandemic hit the industry like a seismic shock. Prior to the pandemic, mountain tourism accounted for 20% of worldwide tourism. However, following lockdown procedures, in 2020 reports stated that a 74% decline in tourist numbers occurs globally, resulting in severe economic losses for both tourism firms, and [ja30] many mountain nations. In response to the crisis, many governments have adopted new methods to tackle mountain tourism; Georgia for example deferred property and income taxes, restructuring debts for individuals and companies operating in the tourism industry. The issue of closed borders was also a prevalent one. However, now in 2023, most[ja31] borders have opened. Regardless, aftermaths [ja32] can still be felt, studies from the UNWTO tourism barometer indicating a 72% decrease in revenue from tourism as a whole in 2021 in comparison to pre-covid levels. Furthermore, statistics collected from 2023 have shown only a 9.5 trillion amount generated from tourism, a 5 trillion decrease from 2019 and 6 trillion from the forecasted amount. Furthermore, it is also important to note that a considerable share of tourism revenue leaks to areas outside mountains, or other international firms, not necessarily benefitting mountain countries. There are

also many hidden costs to tourism, which can lead to unfavorable economic effects in the host community. More developed nations are much more able to benefit off of tourism than less developed ones, where nations have a more urgent need for income, employment and improvements in standards of living through means of tourism.[ja33] Overdependence on tourism can also lead to disastrous consequences, such as the exclusion of local businesses, further lowering the standard of living. [ja34]

Furthermore, tourist activities have been noted to have biophysical impacts. The ecological environment of tourism activity has often been noted as the most fragile, because of intensive exploitation of tourist objectives such as natural parks, which in return can lead to further destruction of ecosystems. Land degradation also occurs as a direct consequence of waste disposal[ja35] in ecological areas committed by mountain tourists, leading to biodiversity loss. Furthermore, land degradation also directly links to climate change, one of the greatest challenges within mountain destinations, which could lead to various events conspiring such as reduction in periods of snow cover, increase in risk of extreme weather events, etc. All of which either negatively affects the already weak economy or decreases the attractiveness of mountain tourism, leading to the destruction of several households and livelihoods. The construction of various tourist attractions to improve attractiveness may also [ja36] modify sensitive alpine areas, impacting not only nature, but the surrounding wildlife.

It is also important to note the disruptive ability of mountain tourism on socio-cultural aspects of mountain communities. Tourists can [ja37] disrupt traditions through direct and indirect relations and interactions with the industry itself. For various reasons, notably weak economical situations, host countries or communities are often found on the weaker side in interaction with guests and service providers. Whilst these impacts are not apparent, and are considerably hard to identify, impacts arise when tourism brings about changes in value systems and behavior, thus threatening indigenous identity. These deviations often occur within social norms, community structure, family relationships, traditional lifestyles, etc. Furthermore, the influence of mountain tourism has also contributed to negative social capital outcomes. Such as; the social exclusion and isolation of newcomers and other marginalized groups within the community, the creation of anti-social norms in response to its many impacts, resource inequities both within Steamboat Springs and between the surrounding communities, and a growing sense of powerlessness.[ja38]

Addressing Climate Change and Deforestation

Amongst other issues, climate change has become a much more prevalent issue in the past decades. Particularly, the issue of tropical deforestation and its devastating impact on mountain communities. Before, it was thought that most deforestation occurs in lowland forests, where industrialization is most apparent, whereas highlands undergo very limited deforestation. However, in recent regional reports on cropland expansion, data suggests that this assumption is quite in fact false. In

fact, in recent years deforestation has become rapidly more apparent. Since the 21st century, as more natural resources and capital such as timber wood are being increasingly exploited, along with emerging agricultural systems such as the boom crops in Southeast Asia. Montane forests have begun reforming, reducing in size and refuge area numbers, creating the emerging threat of extinction of several forest-dwelling species. Furthermore, studies have also shown that this exploitation and reduction in size has weakened forest's ability to store carbon and regulate climate.

Environmental deterioration in many mountain regions has now begun to proceed irreversibly, with this widening circle of destruction now not only impacting nearby forests, but other ecosystems, such as plains, river systems, and harbors. This damage can be monitored in practically every mountain area of Asia to Latin America, where there has been a marked increase in the destructive clearance of forests, but also in flood damage, soil erosion and a noticeable increase in pests. To raise an example, the population pressure in Asia has caused the deforestation of the Himalayan foothills in Nepal, India and Pakistan, as more resources are needed, leading to further exploitation of natural resources. As demand for agricultural land grows for farming and wood for other products along with overgrazing of animals,[ja39] leading to soil loss. Furthermore, studies conducted in 2021 have shown the impacts of deforestation in tropics, leading to an increase in local warming by 2 Celsius. Continued deforestation can not only pose a threat to local livelihoods, reducing resources available, but issues such as soil erosion can subsequently lead to flooding and other catastrophes that possibly can lead to high numbers of casualties.

Climate change has also had a profound effect on the biosphere and cryosphere along with many other diverse impacts on global resources. Many mountain ecosystems are highly sensitive to climate change, in these areas particularly in much cooler environments such as in Western Montana, USA, snowmelt provides 70% of water communities living in western USA depend on. Similar situations occur worldwide, where millions of people are provided water from mountain snow and ice. However, with the threat of climate change, mountain glaciers are getting smaller and smaller, threatening the water supply for hundreds of millions of communities. Glaciers in the Andes have been in a deteriorating state, assessments done by the IAEA have concluded a loss of over 50 percent of glacier coverage since the 1960s (IAEA,2021). [ja40] Melting glaciers and deteriorating snow coverage increases the risk [ja41] of hazards such as avalanches, river floods, landslides, etc. Only made worse with the threat of glacier retreat and the inclusion of permafrost warming. Worldwide, Alpine ecosystems and endemic species are threatened with local extinction and the spread of lowland forests into highland areas. Destroying not only the natural ecosystem itself, but the livelihoods of the community, especially in regard to the agricultural area, with traditional agriculture dying out as grazing areas shrink and water becomes much scarcer.

Major Countries and Organizations Involved

Switzerland

As a mountainous country, Switzerland has had several experiences in facing the challenges of Sustainable Mountain development. As a member nation, Switzerland has provided support through the supporting on-going initiatives and projects to promote said sustainable mountain development, in the aims of improving living conditions of mountain communities and strengthening resilience against climate change. It has also helped in enhancing support for these mountainous regions as vulnerable ecosystems essential to human demand through the incorporation into global processes such as the 2030 Agenda for Sustainable Development. It has also been involved with supporting other mountainous regions similar to themselves such as in Nepal where Switzerland aims to improve living conditions of highland communities through architectural and infrastructure improvements.

IAEA (International Atomic Energy Agency)

Since 2014, the IAEA alongside the FAO (food and agriculture organization of the United Nations) have been monitoring mountain ranges of the six continents. Providing knowledge and information on the impact of climate change on soil and water resources through nuclear and isotopic techniques. This has subsequently led to a better understanding of the impact of climate change on our cryosphere, and the originations and calculations needed to provide frameworks or solutions addressing the issue.

Andes

The Andes has been a particular mountainous country heavily influenced and affected by climate change. In cooperation with the IAEA, the Andes has been monitored to reveal more about the impacts of climate change on water supplies and soil.

World Bank

The world bank has provided several ailing mountainous nations with economic aid and grants through projects such as the Environmental Services Project (ESP). The World bank is currently working with several governments such as the Government of Albania, the Government of Sweden to help mountainous communities through training programs, training for more than 1200 since 2015 to implement the best practices in sustainable resource and land use.

Timeline of Events

Date (start - end)	Name	Description

1950	Glacier retreat	[ja42] Glaciers around the world begin to retreat, as a result of increasing carbon emissions
1992	UN conference on Environment and Development in Rio	Mountains are recognized as vulnerable ecosystems of global importance
2007	United Nations Food and Agriculture Organization new programme	United Nations Food and Agriculture Organization launches new programme to bolster development efforts in mountain communities
2012	UN Rio +20 Conference on Environment and Development	Importance of mountains were reaffirmed
2013	Sustainable Mountain Development	Resolution drafted on the basis of sustainable mountain development.
2014	IAEA project	IAEA along with the United nations FAO begin surveying mountain ranges on six continents
2015	2030 Agenda for Sustainable Development	SDGs are created

Relevant UN Treaties and Events

- United Nations Food and Agriculture Organization launches new programme to bolster development efforts in mountain communities, 20 June 2007
- 2030 Agenda for Sustainable Development, 25 September 2015
- Sustainable Mountain Development, 20 December 2013, **(A/RES/68/217)**

- International Year of Sustainable Mountain Development, 16 December 2021 (**A/RES/76/129**)
- Sustainable Mountain Development, 21 December 2016, (**A/RES/71/234**)

Previous Attempts to solve the Issue [ja43]

The World Bank has implemented several projects such as the Turkey Resilient Landscape Integration Project (TULIP), Environmental Services Project (ESP) and the Climate Adaptation and Mitigation Program in the Aral Sea Basin (CAMP4ASB). Providing economic aid, along with training programs and other initiatives to better aid mountain communities. The TULIP project was launched jointly with the Government of Turkey, aiming to address seasonal flooding and landslides in the Bolaman and Cekerek river basins. CAMP4ASB provided support to mountainous regions in Tajikistan and Uzbekistan addressing the basin's common climate and environmental challenges. Furthermore, through support of the IDA (International Development Association) CAMP4ASB helped improve regional cooperation and adoption of climate-smart agriculture in rural communities.

The UN has also initiated various projects, most notably in 2007 where the FAO launched a new programme to bolster development efforts in mountain communities. The Decentralized Cooperation Scheme pooled all known knowledge together utilizing resources with the expertise of highland communities in the aid of fellow mountainous regions in developing countries. The project had a total budget of \$13 million, where 18 projects were implemented to target the neediest mountain areas in the world.

Member states have also been very active in the issue. Through Switzerland's global mountain programme, the SDC has supported major regional mountain centers in different parts of the world, particularly in ailing countries such as the Andes, Africa, and the Hindu Kush Himalayan region. Contributing to the political dialogue on the development of mountainous areas.

Possible Solutions

Sub-topic 1: Addressing the need for investment in technological and economical improvements to boost communications infrastructure

When providing socio-economic aid, ensure that exploitation of natural resources is done so responsibly and well monitored. Ensure a framework is implemented to better monitor the progress of various efforts. Furthermore, ensure that if architectural advancements are made within these mountain areas they either; do not disrupt ecological areas, or do not disturb local livelihoods. Delegates are also encouraged to find possible ways to improve a country's resilience, in the case of a natural disaster or

climatic disaster. Additionally, delegates must find a way to provide either a better communication system or network access for all developing mountains.

Sub-topic 2: Highlighting the impacts of Mountain Tourism: Socio-economic, Socio-cultural impacts

Delegates are suggested to find ways to implement sustainable tourism, whilst decreasing manmade litter and waste in ecological areas of mountains through means such as the implementation of UN law or other policies. Delegates are also strongly recommended to find solutions to the exclusion of local businesses, in order to reduce dependency on the tourism district.

Possible solutions can include subsidization of local businesses. With increased awareness of local businesses to further reduce interdependence on tourism.

Sub-topic 3: Addressing Climate Change and Deforestation

Delegates are strongly recommended to tackle the issue of climate change head on, finding ways to lower local warming and if possible, possible solutions to reduce global warming through sustainable agriculture, etc. Delegates should also increase awareness of the issue of deforestation, whilst finding possible ways to increase ecological areas and reduce green forests in highland altitudes.

Possible solutions can include; finding new eco friendly technologies regarding tourism for example buggies run on electric energy. Another can include providing subsidies towards tourism firms deemed sustainable. In addition, taxations on carbon emitting firms can also be implemented to help elucidate the issue.

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