

**UNDERSTANDING ENVIRONMENTAL CHALLENGES
THROUGH THE PRISM OF HUMAN SECURITY: A
COMPARATIVE STUDY OF NEPAL AND BHUTAN**

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Certificate that the Thesis entitled

UNDERSTANDING ENVIRONMENTAL CHALLENGES THROUGH THE PRISM OF HUMAN SECURITY: A COMPARATIVE STUDY OF NEPAL AND BHUTAN submitted by me for the award of the Degree of Doctor of Philosophy in Arts at Jadavpur University is based upon my work carried out under the Supervision of **PROF. ISHANI NASKAR, PROFESSOR, DEPARTMENT OF INTERNATIONAL RELATIONS, JADAVPUR UNIVERSITY** And that neither this thesis nor any part of it has been submitted before for any degree or diploma anywhere / elsewhere.

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PREFACE

I always wanted to work on the Eastern Himalayan Region. Therefore, I have taken two countries for my research work i.e. Nepal and Bhutan. Therefore, under the guidance of my supervisor I decided to do a comparative study of Nepal and Bhutan as both countries are landlocked Himalayan countries.

The main aim of this research is to understand the challenges faced to the Human Security in Nepal and Bhutan through environmental insecurity. Environmental security is one of the components of Human Security. It has emerged as a new debatable topic. This study also tries to identify and analyse different initiatives taken by government to address such issues.

Human Security and environment are undoubtedly closely related. Natural resource access and environmental vulnerability are two of the most important elements of Human Security, and human activities and conflicts have a significant direct and indirect impact on environmental change. Human security according to the UN has five fundamental principles that it is “comprehensive, people centred, prevention-oriented approach to security that aims to tackle a wide variety of risks that people and communities face. Human security necessitates an integrated, bottom-up approach that takes into consideration grassroots concerns as well as real-world dynamics due to its context-specific character.

Environmental Security can be described as the availability of natural environment that is healthy for both humans and the environment in the future. When natural resources are overused and cause environmental damage, there is less availability, which in turn causes violence and dispute. However, there should be a discussion about environmental security because of the growing issues with climate change, sea level rise, deforestation, greenhouse effect, depletion of earth's limited resources, declining agricultural system and ozone layer holes. These issues require immediate attention in order to be resolved.

A number of effects, including those on health, political instability, economic productivity and so forth, can result from environmental change. Environmental threats can also have an impact on a variety of issues, including people, communities, families' social organisations, different identity groups (children, women, ethnic groups, etc.), diasporas not geographically concentrated, governments, and different biological species. Even a single risk to the environment might possibly have negative repercussions at numerous scales, ranging from the domestic to the global level

There is an urgent need to address increasing environmental issues, such as deforestation, climate change, agriculture, water scarcity, hydropower construction and pollution. The world's population is expected to surpass nine billion during the next fifty years, the production of the global economy may grow five times faster than it does now, and the scarcity of natural resources will drastically worsen. Aquifers, rivers, and other resources will likewise face extensive depletion and degradation in the next generation. Thus, environmental security has swiftly emerged as a crucial concern in this new phase of security studies. This research has looked into the different environment challenges that threaten the Human Security of Nepal and Bhutan.

LIST OF ABBREVIATIONS

AEPC	:	Alternative Energy Promotion Centre
BBIN	:	Bangladesh Bhutan India and Nepal
BIMSTEC	:	Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation
CA	:	Constituent Assembly
CFC	:	Chlorofluorocarbons
COP	:	Conference of Parties
CPA	:	Comprehensive Peace Agreement
CSCE	:	Conference on Security and Cooperation in Europe
CSR	:	Comprehensive Security Report
ESCAP	:	Economic and Social Commission for Asia and the Pacific
FAO	:	Food and Agriculture Organization
GATT	:	General Agreement on Tariffs and Trade
GDP	:	Gross Domestic Product
GDP	:	Gross Domestic Product
GEC	:	Global Environmental Change
GECHS	:	Global Environment Changes and Human Security
GESI	:	Gender Equality and Social Inclusion
GHG	:	Greenhouse gas
GLOF	:	Glacial Lake Outburst Floods
GNH	:	Gross National Happiness
GPI	:	Gender Parity Index
HAB	:	Handicraft Association of Bhutan
HCFC	:	Hydrofluorocarbons
HDI	:	Human Development Index
HDR	:	Human Development Report
HSI	:	Human Security Index
ICC	:	International Criminal Court
ICCPR	:	International Covenant On Civil And Political Rights
ICESCR	:	International Covenant On Economic Social And Cultural Rights
ICRC	:	International Committee Of The Red Cross
IGBP	:	International Geosphere-Biosphere Programme
IHDP	:	International Human Dimensions Programme

IMF	: Indian Monetary Fund
INDC	: Intended Nationally Determined Contribution
IPCC	: The Intergovernmental Panel on Climate Change
LAPA	: Local Adaptation Plan for Action
LDC	: Least Developed Countries
MAD	: Mutually Assured Destruction
MDG	: Millennium Development Goals
MOF	: Ministry of Finance
MVA	: Motor Vehicle Agreement
NAM	: Non Aligned Movement
NAPA	: National Adaptation Programme
NATO	: North Atlantic Treaty Organization
NEC	: National Environment Commission
NEPA	: National Environment Protection Act
NGO	: Non Governmental Organisation
NIRA	: National Institutes for the Advancement of Research
NUT	: Nuclear Utilisation Theories
ODA	: Official Development Assistance
ODS	: Ozone Destroying Substances
OECD	: Organisation for Economic Cooperation and Development
SAARC	: South Asian Association for Regional Cooperation
SDG	: Sustainable Development Goals
STAP	: Scientific and Technical Advisory Panel
UDHR	: Universal Declaration Of Human Rights
UN	: United Nation
UNCCD	: United Nations Convention to Combat Desertification
UNCEP	: United Nation Conference on Environment and Development
UNDP	: United Nations Development Programme
UNEP	: United Nation Environment Programme
UNFCCC	: United Nations Framework Convention on Climate Change
UNTFHS	: United Nation Trust Fund for Human Security
WCED	: World Commission On Environment And Development
WCRP	: World Climate Research Programme
WTO	: World Trade organization

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Chapter 1

INTRODUCTION TO THE THESIS

Background

Traditionally, the concept of 'security' was concerned with the security of the state. Threats to the Security were assumed to originate from 'external sources'. The issues of security were examined in the framework of 'state security,' which focused on the 'protection of the state and its boundaries, people, institutions, and values from external attacks'. The fundamental values were taken to be sovereignty and territoriality. Military protection was considered to be the principal instrument in their pursuit of security.

During the last twenty years of the twentieth century the meaning and the concept of the term security has been contested. The central point of this contestation has been 'security for whom', 'security for what' and 'security by what means.' The traditional concept of state security, military being the main core of concern has not disappeared completely, rather the focus of security has expanded to economy, health, gender, culture and environment based on an expansion of core values to include 'welfare and identity'.

The new dimension of security that thus emerged is 'Human Security' which was possibly because of convergence of several factors after the cold war. The term Human Security is mostly associated with 'Human Development Report 1994' on Human Security drafted by Mahbub ul Haq. It is mostly people-centred, the main focus of attention is human, individuals and their community worldwide. Therefore, the main aim of Human Security is protecting individuals over the states; this distinguished it from the traditional notion of security. Its main focus is the human race/ people regardless of their race, religion, gender, ethnicity, citizenship or other distinguished characteristics.

The state-centric security agenda continued to exist in the post-Cold War era; rather, a new security agenda needed to be implemented. Realists and Neo-Realists, however, have both overlooked the fact that security concerns transcend the state and military. The lack of awareness of non-military security issues (such as 'socio-economic structures, the ethnic composition of a nation-state, and its relations with the security environment) is the major

constriction of the realist and neorealist schools of thought. Protecting citizens interests and their lives from 'freedom from fear' and 'freedom from want' are missing in their arguments.

Security for an individual is not the same as security for a country. According to the Hobbesian model of the state, the state would ensure the safety of its citizens residing within its borders since the 1648 Treaty of Westphalia, which followed a 30-year conflict. The people must be guaranteed security by the state. Nonetheless, a lot of states today are either fully or partially failing to uphold this social contract to safeguard its citizens. Some states even threaten their own people through repression, genocide or massacre.

Human Security encompasses more than just the absence of war; it also includes people's right to a safe environment in which to live and grow, as well as access to employment and political participation. Human Security also refers to the safety of the individual or groups in terms of their economic, cultural, social, political, and environmental rights and choices. People in many nations still lack access to their basic rights and are compelled to compromise their freedom in the name of 'national interests' and 'sovereignty'. Nearly every nation in the world is currently threatened in some way or other by factors such as migratory movements, degradation of environment, terrorist attacks, infectious disease outbreaks, racial, ethnic, or religious conflicts, extreme poverty, and inequality. These different threats have a significantly deeper and more profound impact than the threats posed by conventional interstate rivalry and conflicts. As a result, hundreds of thousands of individuals have suffered because they are no longer able to exercise their fundamental rights to life and livelihood. In other words, both in the national security discourse and in the global security environment, safeguarding the lives of individuals has grown in importance and prominence. This has presented new challenges to nation-states.

The UNDP Human Development Report of 1994 definition of Human Security argues that the scope of global security should be expanded to include threats in seven areas i.e economy, food, health, environment, personal, community and political security.

The notion of Human Security has been used for over two decades to frame and examine the problems of social change, and since late 1990s it has been used for the purpose with respect to global environmental change. Therefore, research on intersections between environmental change and Human Security is an emerging field. An area which is taken for study in this research is how environmental change can have an impact on Human Security.

Environmental Security as a Concept

When it comes to the discussion of security, environmental security is a notion that is relatively new and inadequately established, particularly in the South. On the other hand, in the 1980s, the North began incorporating environmental issues into security discussions and policy. Depending on the context and degree of knowledge, scholars and practitioners have diverse interpretations of environmental security. However, due to resource scarcity, climate change, and demands on ecological services, environmental security has recently become a key concern, even in the South.

In the report of the 'World Commission on Environment and Development (WCED)' 1987 'Our Common Future', the term "environmental security" was introduced in the context of sustainable development, clearly linking environmental security concerns to development. The United Nation Development Programme report on Human Development 1994 also linked environment and development and raised concern over environmental security. According to Jon Barnett, environmental security gained recognition in the field of environmental studies and peace research in the 1980s. Before that, terms 'environment' and 'security' were used interchangeably; environment generally referred to the surrounding atmosphere, natural forces, and living conditions and was primarily concerned with natural processes, while security was concerned with safety and avoiding threats primarily through the use of force.

The effect of environmental degradation and outcome of environmental change are mostly associated with non-conventional notions of security. A new agenda has been created in the discourse of security studies focusing on the environment and its problems which in turn is a threat to individual, national and global security. The increasing scope of international security now includes environment degradation, global warming and climate change. These issues have extended human understanding of environmental change, conflict, and vulnerability and explored the roles of conservation and sustainable development in promoting peace, stability, and Human Security.

Environmental security is increasingly being seen as a crucial variable in security studies, geopolitics and International Relations across the globe. For long, changes in the environment were not accounted for as the environment was largely considered 'static'. Therefore most geopolitical and security scenarios were not paying much attention to the geographical impacts of environmental change, despite the fact that geopolitics itself stands for the impact

of geographical factors on politics (particularly IR). One of the reasons for this could be that changes in the environment have been slow, irregular, negligible and or non-quantifiable in nature. The contemporary discourse on environmental security, a concept that began to be discussed in the 1960s and 70s, has until recently struggled to attain a prominent position in the IR/security studies discourse. It has been caught between 'traditional' and 'non-traditional'; 'national' and 'human'; and 'global' and 'local'. The theoretical realm and approaches that attempt to explain environmental security is highly divided, whether it is with respect to the contours of the concept or its applications on the ground. This largely makes the act of theorising environmental security a critical or analytical exercise especially in research.

The relationship between human beings and environment is evident. Humans are inextricably linked to the natural world. The environment directs all living things, whether they are on land, in water, or in the air. On the one hand, the environment offers a living ground for humans; on the other hand, humans endanger the environment by irrational usage and overconsumption of its resources. Consequently, the environment is vehemently threatening human lives and creating perennial insecurity. The relationship to environmental harm is directly proportional to human actions upon the environment.

The world grew environmentally concerned in the 1960s, after witnessing the conflict between environmental abuse brought on by human needs and the increasing demand for resources by people. Furthermore, the Brundtland Commission Report raised concerns on environmental issues. Environmental security as a concept was initially put forward in the 1980s when scholars like Arthur Westing debated the necessity of connecting environmental security with Human Security.

In light of the above observation this research has tried to address the environmental challenges and its relation with Human Security in the two countries i.e. Nepal and Bhutan.

Human Security in Nepal

Economically Nepal is one of the poorest nations in the world. The major Human Security challenges that Nepal faces is poverty, social protection, health problems, migration issues, climate change, environment and politics. It is also prone to natural disasters (for example the earthquake in 2015 and other several floods and landslide every year), and is in particular

need of robust social protection mechanisms for prevention of disaster training and post-event relief packages.

Nepal is also one of the most climate-vulnerable countries in the world. Climate Change is considered to be one of the most impactful concerns for Human Security. The issue of climate change is related to environmental insecurity which in turn is linked with food, water, and energy and health security.

Nepal's political history is marked by protest for democracy in the country. The Maoist conflict between 1996 and 2006, which was supposedly fought to overthrow the unitary, centralized political system and compel the political elite to share state power and resources with other citizens, was the most apparent example of the discontent that many Nepalese feel about the injustices and inequalities that define their society. Despite the Maoists' advocacy of equality, the legacy of the conflict ironically stands as one of the biggest obstacles to guaranteeing development as a prerequisite for equality in the nation today. Reminders of the conflict can be found in many elements of the present-day Nepal, such as the deep-rooted and virulent political differences that prevented the Constituent Assembly from reaching an agreement regarding the Constitution in May 2012. This political standoff, as well as other conflict-related challenges, have an impact on Nepal's development path and, as a result, it's Human Security. In this sense, the Maoist insurgency and its ongoing legacy are both a cause and a consequence of human insecurity in Nepal.

Nepal's efforts to promote growth and Human Security could be aided or hindered by its strategic location between India and China, two fast industrializing global powerhouses. On the one hand, both powerhouses' involvement in Nepal frequently displays itself in the shape of Human Security-inducing help. Nepal, on the other hand, due to the size and influence of its neighbours is powerless to challenge any activity that undermines its Human Security situation

Nepal's economic dependence on India for trade disadvantages its citizens, whose Human Security is dependent on the movement of goods between the two countries, including essential necessities like food, fuel, and other basic goods - between the nations. When the transfer of goods is stopped because of accessibility issues or the Indian government's whim, the Nepali citizens suffers. Furthermore, the security of people in the Terai, where crime is rampant, is impacted by the free border between Nepal and India. Nepal is also impacted by the industrialization of China and India in terms of environmental security concerns like

pollution and water scarcity, which are anticipated to develop into significant issues in the future.

Human Security in Bhutan

Bhutan is the first country to take a detour from the popular Gross Domestic Product (or GDP) approach and take a new, multi-dimensional approach to development, namely, Gross National Happiness. As one of the last countries to be affected by globalization, Bhutan's development process is indeed quite unique.

Bhutan is a small, remote, landlocked Himalayan kingdom squeezed between Asia's giants, China and India. Bhutan lies in one of the most fragile eastern Himalaya ecosystems. It is also one of the most vulnerable countries to get impacted by climate change.

Bhutan is a zero-carbon country. It has a strong conservation policy. Interestingly, it is also the world's highest per capita consumer of fuel wood. Rural Bhutanese make up nearly 69% of the population and are heavily dependent on natural resources for ecosystem service for their livelihoods. Economic growth and national revenue are strongly dependent on the hydropower system, a sector that is itself dependent on the changing pattern of climate change.

On the issue of GDP and the environment, Bhutan keeps the environment before development. Bhutan simply refuses to be just part of the global economic market by making happiness the benchmark for its development. Gross National Happiness outweighs Gross National Product. The government of Bhutan is always proactive in creating policies that support environmental preservation. Bhutanese believe in living in harmony with Mother Nature by following a simple formula of the nature of coexistence.

Being one of the many least developed countries, Bhutan's population is around 7,35,553 and is projected to grow in the coming years. Over the years the country has emerged as a principal actor among the developing and developed nations with regard to the conservation of the environment. In spite of its mountainous and rugged terrain, the country has achieved growth and development through various policy initiatives that have boosted the national economy and at the same time conserving the environment. However, in spite of being at forefront of environmental protection, Bhutan faces the brunt of major environmental issues due to (a) 'the need to develop' (b) 'global climatic changes'. The situation of the environment in Bhutan is indeed very problematic. The country faces genuine environmental

issues. Land is diminishing quickly with deforestation being rising rapidly. Population explosion, rising poverty levels, upgraded industrial activity, human resettlement has further intensified the major environmental concerns within the country. In order to ensure development of the people, there is pressure upon the already fragile environment which is further aggravated by global climatic changes. For having a pristine environment, Bhutan has its fair share of environmental issues which are unique to its geography and climate.

Economy of Bhutan basically revolves around the use of available resources found within its national territory. Agriculture, rearing of animals and the utilization of natural products found within its forests form the financial backbone of rural Bhutanese communities who are a major part of the population. In order to improve the large rural economy at a sustainable pace, availability of land and its levels of productivity are of vital importance.

Bhutan has focused on environment conservation and protection but talking about Human Security in the country there still need to be policies made in this regard.

Rationale of the Study

The main aim of this research work is to probe into the major threats to the non-traditional security of these two countries. Taking environment as a major aspect of research it tries to understand the link between Human Security and Environment Security. The research addresses the issues related to Human and Environment Security in Nepal and Bhutan. While the concept of Human Security was introduced in the year 1994, it was only two decades later Nepal adopted the concept of Human Security and started engaging in it. However still Nepal fails to give enough importance to Human Security in its developmental policies and planning programmes. There is a research gap in Bhutan's Human Security too as there is a very limited work done in this aspect. Though Bhutan has given more emphasis to Gross National Happiness of the people over its Gross Domestic Product but a more comprehensive work is to be done on the aspect of Human Security.

Statement of the Problem

Human Security is still a contested concept. Although after the end of cold war the focus shifted from traditional notion of 'State Security' to 'Human Security'. There always emerges a question of 'security for whom' 'security for what' and 'security by what means' Out of the seven areas which UNDP has highlighted as a threat to Human Security, this research will take into one area of concern i.e. environment security and will try to analyse the different

environmental challenges in Nepal and Bhutan which often leads to human insecurity. Bhutan's vulnerability to climate change has mainly been the fragile mountain environment and dependence on agriculture and hydropower for economic development. Hydropower has been the main source of revenue for Bhutan government and disruptions in hydropower from climate change can lead to outsized economic impacts. Whereas, in Nepal as well climate change is one of the main concern to the environment. The objective of the study is to understand the link between environment and the Human Security as how environment challenges can have a direct impact on Human Security.

REVIEW OF LITERATURE

Ian Holliday and Brendan Howe, 'Human Security: A Global Responsibility to Protect and Provide' (2011)

The article 'Human Security: A Global Responsibility to Protect and Provide' by Ian Holliday and Brendan Howe, first looks at how the concept of human security came to being within the larger field of security studies, then it focuses on discussions around it and highlights significant similarities between human security and development. It then expands on this to restate Human Security as freedom from both fear and want. Finally, it explores whether this method creates an obligation to intervene. The argument that this conception creates a new path forward for human security studies is summed up in the brief conclusion.

Barry Buzan, 'The article New Patterns of Global Security in the Twenty First Century' (1991)

The article 'New Patterns of Global Security in the Twenty First Century' by Barry Buzan talks about the changing dimension of security. The so called "third world" has lost its importance. The change in the terminology from third world to the periphery may be seen as a promotion to second but the reality is that the centre is more dominant and the periphery much subordinate. Even environment issues can be a talk of centre and periphery dialogue and tensions, but there still lies a question that will environment be a major part of security agenda in the coming years.

Nassef M. Adiong, 'The Probability of Humanitarian Intervention as a Framework for Human Security' (2011)

The article 'The Probability of Humanitarian Intervention as a Framework for Human Security' by Nassef M. Adiong, he tries to bring in humanitarian intervention as a tool of human security. Here the author wants to show human security as an autonomous security study area, though not completely independent from non traditional security study.

Felix Dejaiffe, 'Critics and prospect of Human Security what are the contributions and criticism of human security as a theoretical concept?' (2019)

The article 'Critics and prospect of Human Security what are the contributions and criticism of human security as a theoretical concept?' by Felix Dejaiffe points out that theoretical contribution incorporated with international instrumentalities play an important role in giving a conceptual clarity to Human Security. The very notion of Human Security has united a diverse coalition of states, non-state actors.

Daniel Trachsler, 'Human Security: Genesis, Debates, Trends by Daniel Trachsler' (2011)

The article 'Human Security: Genesis, Debates, Trends' by Daniel Trachsler, the author writes how the notion of security got expanded with the addition of the concept Human Security in the security studies. He also mentions in the new era where there is a shift of focus from state security to individual security and have gained importance. Though it is not free from criticism as the concept itself is very vague.

Caroline Thomas, 'Global Governance, Development and Human Security: Exploring the links by Caroline Thomas' (2001)

'Global Governance, Development and Human Security: Exploring the links' by Caroline Thomas, in this article the link between global governance, development and Human Security is being discussed. It talks about poverty and the inequality as a major concern to Human Security in the 1980 to 1990s. As during the 20th century Neoliberals was the dominating factor in the world economy and the inequality was seen at a larger extent. Therefore, new policies were implemented by global governance institutions. It was a question that, will this development go hand in hand with Human Security.

Andrej Zwitter, 'Neutrality and Impartiality in Implementing Human Rights: A Framework for Measuring Human Security' (2010)

Andrej Zwitter in the article 'Neutrality and Impartiality in Implementing Human Rights: A Framework for Measuring Human Security' has used a conceptual tool for measuring human security based on what are human needs approach by incorporating human rights. This article has tried to give examples from peace operations, which faces challenges from the local population while implementing human rights that contrast with the local culture, religion or their values, therefore he mentions that it is very important to keep in mind that neutrality and impartiality are to be preserved while implementing human rights and this is the key to the concept of Human Security.

Mely Caballero-Anthony, 'Revisioning Human security in Southeast Asia' (2004)

'Revisioning Human security in Southeast Asia' by Mely Caballero-Anthony, the article aims to capture the dynamics of contesting security in Southeast Asia and examines how states and non-state actors have responded to the changing nature of the security. The argument here is that in spite of structural constraints and problems with conceptual clarity Human Security is finding a place in the regional security discourses.

P.H. Liotta, 'Boomerang effect: The Convergence of National and Human Security' (2002)

The article 'Boomerang effect: The Convergence of National and Human Security' by P.H. Liotta, here the author writes how the 9.11 attacks changed the security dimension in the USA. The term security is very ambiguous as the author tries to highlight the different concept of security ranging from traditional to non traditional concept keeping in mind the theoretical aspect of security. He also discusses about the different threats of environmental change particularly in regard to climate change and greenhouse effect.

Karen O Brien and Jon Barnett, 'Global Environment Change and Human Security (GECHS)' (2012)

The article, 'Global Environment Change and Human Security (GECHS)' by Karen O Brien and Jon Barnett is basically a review on GECHS. It explains the role of Human Security on research done in environmental change. This article also considers new research that has

emerged from this field which includes research on sustaining and enhancing Human Security in response to complex global environmental challenges.

Jussi Lanie, 'Confusing compass points of human security- Finnish Perspectiv' (2021)

The work 'Confusing compass points of human security- Finnish Perspective' by Jussi Lanie talks about the different concerns and threats that Finland faces. The threats which they face are the threat to the individual wellbeing and security of various issues. The author has also discussed that the security means different things to different people. Here it also gives importance to the state as an important producer of Human Security.

Kumar R, 'Redefining Security: An Environmental Approach' (2019)

Kumar R in his work, 'Redefining Security: An Environmental Approach' has tried to understand the concept of security taking environment as a factor. He has tried to show how environment threat can sometimes be a cause of violent conflict in between countries. He addresses the issue of climate change, energy security and global warming and how this can impact the wellbeing human life.

Lorraine Elliott, 'Human Security/ Environment Security' (2015)

The article 'Human Security and Environment Security' Lorraine Elliott offers us the background of human security and environment security after the 1994 United Nations Human Development report. It tries to gives us the picture of how environment security and human security as two different concepts have intersected and overlapped at one hand and deviate on the other. This article has also brought into light how environmental security has been diverged from its potentially unorthodox and critical roots in human security.

Vimal Khawas , 'Environmental Challenges and Human Security in the Himalayas' (2007)

The paper presentation titled 'Environmental Challenges and Human Security in the Himalayas' by Vimal Khawas has tried to bring out the different environmental insecurities which often challenge the Human Security in the Himalayan region.

Antonia Marquina, 'Environmental Security and Human Security' (2004)

'Environmental Security and Human Security' this chapter from a book Environmental Challenges in the Mediterranean explains the process of elaboration of the concept of environmental security and the difficulties in its definition. It has also presented a link with

the concept of human security explaining the low priority of environmental issues in the different approaches and definitions of the concept of human security.

Richard Matthew, 'Environment and Security' (2014)

In this article the author has provided us with the background of environment security. He also has tried to show the conflict arising out of environment security by citing examples from different writers. He has taken South Asia to understand environmental insecurity in this region.

Niloy Ranjan Biswas, 'Is Environment a Security Threat? Environment security beyond securitization' (2011)

The article 'Is Environment a Security Threat? Environment security beyond securitization' by Niloy Ranjan Biswas has used a constructivist theory to explain the idea about environment security, where he tries to link the environment degradation and security. He suggests that environment as an important determinant factor in the new security studies. In support he has given examples of different environmental calamities which have been a threat to the security of a particular region.

SakaramaSomayaji and Ganesh Somayaji, 'Environmental concerns and sustainable development some perspective from India' (2009)

The chapter in the book "Environmental concerns and sustainable development some perspective from India" by SakaramaSomayaji and Ganesh Somayaji, here the author has talked about the environmental challenges that affect the human lives in the Himalayan region. It has put forward how the Himalayan region has been neglected by the policy makers.

Marc. A. Levy, 'Is the Environment a National Security Issue' (1995)

This article is written in reference to the United States. The author points out that the environment problems have security risks but the risk is of lesser importance. The only threat to the US that he considers from environmental problems is climate change and ozone depletion.

Karen O'Brien, 'Are we missing the point? Global Environment change as an issue of human security' (2006)

In this article the author talks about reframing the global environmental change as an issue of Human Security. He mentions that science is has been given more emphasis over security in most debates of climate change. The shift to focus from science to Human Security is crucial as environmental change cannot be addressed only through science. Human security is also related to the conditions that are created in the society.

Matt McDonald, 'The Environment and Global Security' (2000)

The article 'The Environment and Global Security' by Matt McDonald, here the author has tried to link the environment and security in both academic and practical circles emphasizing particularly on environment change.

Ngawang Chhogyel and Lalit Kumar, 'Climate change and potentials impact on agriculture in Bhutan: a discussion of pertinent issues' (2018)

The article 'Climate change and potentials impact on agriculture in Bhutan: a discussion of pertinent issues' by Ngawang Chhogyel and Lalit Kumar talks about how the small country like Bhutan where agriculture is the main source of income has been under serious threat due to climate change. Though the country has taken measures to remain carbon neutral, it has been facing the brunt of emissions caused by the larger global economies. Therefore, it has become essential for a country like Bhutan to adopt proper policy to support enhanced investment and technology generation.

VC Shushant Parashar and Shalini Saxena, 'Climate Change Challenges in South Asia: A case of Bhutan' (2019)

The article *Climate Change Challenges in South Asia: A case of Bhutan* by VC Shushant Parashar and Shalini Saxena deals with the impact of climate change in South Asia and Bhutan in particular where he finds that though different initiatives taken by the Bhutan government to tackle the climate change still there has been causes of environmental degradation, and as majority of the population of Bhutan is dependent on agriculture which is further causing environmental burden thus leading to environmental degradation.

Dorji Yangka et.al, Sustainability in an Emerging Nation: The Bhutan case study (2018)

Sustainability in an Emerging Nation: The Bhutan case study by Dorji Yangka et.al, In this article the authors had mentioned about the growing importance of sustainable development

in both theory and practice. Here they have taken the case of Bhutan and have tried to see if the sustainable approach adopted by Bhutan can help to link between theory and practice in the emerging countries where the economic growth is strong.

Arun Kumar Singh, 'The article Human Security in Nepali Perspective' (2019)

The article *Human Security in Nepali Perspective* by Arun Kumar Singh brings to the light that the country with poor economy like Nepal which has less coping capacity to the natural disasters. The country has been facing challenges due to climate change which in turn is leading to human insecurity.

Naresh Adhikari, 'An Analysis of Major Environmental Threats to Human Security in Nepal' (2020)

Naresh Adhikari, in his work 'An Analysis of Major Environmental Threats to Human Security in Nepal', has emphasized on climate change as a major aspect of threat to human lives. He then has tried putting a light on how environment security is linked to human well-being. He has also given some mitigation methods that can be adopted to deal with environment insecurity.

Research Gap

The human dimension has now come into the security studies debates, but what Human Security is in itself a complex concept. A more cohesive definition of Human Security would be helpful for research. The above-mentioned literature has been mostly focused on the environmental impact on the security of the nation. It has not focused exclusively on how environmental degradation can be a threat to the daily lives of people living in that particular area. Though the term environmental security came into existence in the 1960s to 70s it has then been gradually gaining importance in relation to the larger security discourse. The work done is basically related to environment as threat to the nation. There has been little work done on how environment challenges can be a major concern to Human Security and to understand environment security from a Human Security perspective. This research will be focusing on the dimension of environment as a threat to Human Security and also to understand the link between Environment Security and Human Security in Nepal and Bhutan as both the countries are facing environmental challenges, since not much work been done in

this region, therefore this research will try to fill in the literature gap, also this research will be a comparative study of the two countries.

OBJECTIVES OF THE STUDY

1. To analyse the link between Environment Security and Human Security.
2. To identify the major environmental challenges affecting human security in Nepal and Bhutan
3. To critically examine the institutional responses to the issues of environmental Security in Nepal and Bhutan

RESEARCH QUESTIONS

1. How does environment play an important factor in human security?
2. What are the major environmental issues affecting human security in Nepal and Bhutan?
3. How do government and various institutions respond to the environmental challenges in Nepal and Bhutan?

RESEARCH METHODOLOGY

The study is in the qualitative research combining both descriptive and analytical methods. The literature relies on various sources both primary and secondary. Secondary data sources included number of national and international published books, articles and journals. Further, both published and unpublished reports, papers and articles available with various government and private agencies was extensively utilised in the study besides the secondary published material. Primary data collection was done by snowball method. Interviews were conducted at the official level. Various organizations, NGOs and Research institutes related to environment were interviewed. Government offices officials of forest department, environment and climate department, water department of both Nepal and Bhutan were interviewed in order to understand the policies that has been initiated by the government in the field of environment. Field visits was conducted taking into account the three geographical region that included the Hilly, Terai and the Himalaya region and questionnaire was distributed to the to the local people to understand the ground reality and their awareness on the said topic.

CHAPTER CONTENT:

Chapter 1: Introduction

This chapter deals with the introduction of the study. The chapter main focus is on the background, rationale, statement of the problem, research questions and objective, literature review, research gap and research methodology.

Chapter 2: Human Security, Environment and the Challenges of Development

This chapter deals with the debate of traditional security and non-traditional security, as how the focus from state security shifted to Human Security. The emergence of the concept of Human Security has been explained in detail. Freedom from Fear and Freedom from Want has been taken as a conceptual framework. Canada having adopted freedom from fear in their foreign policy and Japan adherence to freedom from want. This chapter has also dealt with Human rights and has briefly explained how Human Security and Human Rights are interlinked.

This chapter goes on further explaining the emergence of the concept of Environmental Security, thereby showing the link between Environment Security and Human Security. Further this chapter has also pointed out that Human security and development are inextricably linked and mutually reinforcing.

Chapter 3: Human Security and Challenges to Environmental Security in Nepal

This chapter has dealt with the brief political history of Nepal. The chapter further goes on explaining the challenges to Human Security in Nepal. It has also addressed the influence of India and China on Nepal as Nepal lies between the two rapidly industrialising global powerhouse which have the ability to help or hinder its effort to develop and ensure Human Security. It has also focused on the MDGs and the SDGs which plays an important role in the development of the country. Further this chapter has discussed about the various environmental challenges that Nepal has been facing. In this chapter the data collected from the field visit has also been analysed.

Chapter 4: Human Security and Challenges to Environmental Security in Bhutan

This chapter starts with the historical background of Bhutan. Further it has dealt with explaining Human Security in context to Bhutan. Gross National Happiness the ideology that

directs Bhutan's development plan has been explained in detail. Human Rights in Bhutan have also been discussed in the chapter. As Bhutan is a landlocked country between two superpower India and China, how does these two countries make an influence on Bhutan has been discussed in detail.

This chapter has also dealt with the MDGs and SDGs of Bhutan and has assessed Bhutan achievements of the target set in the two developments goals. This chapter has dealt with the environment security challenges in Bhutan rigorously. The data collected from the field visit has been analysed in this chapter.

Chapter 5: Comparative Study of Policy Responses to Environmental Security in Nepal and Bhutan

This chapter has dealt with the different environment policies related to climate change, water policies etc of Nepal and Bhutan. This chapter has also highlighted briefly the issues of Lothsampas as this may have a negative impact on the resources to the host country. The chapter also addressed the impact of COVID -19 on Human Security of the two countries.

Chapter 6: Conclusion to the Thesis

This Chapter combines all the knowledge and insights gathered in the earlier chapters. The chapter covers research findings and aims to address every research question posed in the introductory chapter.

Chapter II

Human Security Environment and the Challenges to Development

Introduction

Security studies began in the discipline of International Relations that initially concentrated on the two key aspects: On the one hand, global security, which is concerned to the defence and stability of the international system. National security, on the other side, is concerned with protecting individual states against external harm as well as internal problems or instability. State was seen as the primary actor in realist theories of International Relations, which define security as “the protection of the state from external threats.” Notwithstanding the constant reference to the state, the term security is also associated with the idea of ensuring people's safety against crimes or violence, financial wellbeing and religious peace.¹

In historic events like the French Revolution in the late eighteenth century and Napoleonic wars, in the early nineteenth century, security threats to the states were the most significant security issue.² For MacFarlane and Khong, this meant the “the reification of the state privileging state security over the security of individuals residing within it.” As a result, the state's importance in terms of security “was the result of particular historical circumstances.”³

Most of the twentieth century the concept security was monopolised by state security. However, this definition and nature of security have been under more and more criticism during the 20th century, especially in the last 20 years. What exactly needs to be protected both academically and practically has been the focus of this debate. Yet the historic emphasis on the state is still present. Nonetheless, the discussion of security has grown beyond military issues to take into account others, including the economy, the environment, health, gender, and culture.⁴

Within the larger discourse of International Relations, security studies are one of its sub disciplines. International Relations as a discipline includes states (represented by

¹Hideaki Shinoda, “The Concept of Human Security: Historical and Theoretical Implications” (IPSHU English Research Report Series No.19 Conflict and Human Security: A Search for New Approaches of Peace-building, 2004):6-7

² Nuno Severiano Teixeira and Daniel Marcos, *Evolving Human Security Challenges in the Atlantic Space* (Brookings Institute Press, 2019): 3-4

³ S Neil Macfarlane and Yuen Foong Khong, *Human Security and the UN : A Critical History* (Bloomington, Ind. ; Indianapolis, Ind.: Indiana University Press, 2007):246

⁴ G. John Ikenberry, S. Neil MacFarlane, and Yuen Foong Khong, “Human Security and the UN: A Critical History,” *Foreign Affairs* 85, no. 5 (2006): 1, <https://doi.org/10.2307/20032086>.

governments), international organisations (either intergovernmental or non-governmental), and, to a lesser extent, certain private players. A subset of those political interactions that are particularly significant for preserving the safety of the players and the populace are the focus of security studies. Conventional domestic policy concerns, like health and rights, are more important than ever on the global political agenda, while events that occur in other states like disasters or massacres, are considered to be of political relevance for individuals who maybe not be personally affected. There is debate among international relations theorists if security studies should continue to place a strong emphasis on military threats to state security or broaden its scope.⁵

The 'Independent Commission on Disarmament and Security issues' commonly known as 'Palme Commission' was the first to propose the idea of extending the notion of security beyond state security to individual security in 1982. The first thorough critique to the sole military approach to security was made on the report, "Common Security", in addition to emphasizing the necessity to pay proper attention to the relationship between security and people's well-being.⁶

The debates on Human Security contrast humanitarianism and the freedom from want and freedom from fear as a right or necessity against the realist Westphalia Concept of state security discourse, symbolised by the war on terror, these new discussions have only been officially acknowledged in the last ten years or so, since the 1994 report of 'United Nations Development Programme (UNDP)', opened up the discussion of the root causes of violence in reaction to what Hedley Bull may have referred to as a "new medievalism,"⁷

The concept Human Security emerged during the time of prominent global changes: the fall of the Soviet Union which brought the Cold War to an end, ending bipolar politics. It has allowed for the identification of new dangers and disputes in along with the numerous unsolved ones for example nuclear issue. International rules and norms have altered as a result of globalisation, which has reduced national obstacles to allow for a faster movement of capital and technology. The beginning of the 1990s brought about a number of changes.

A few years prior, attempts to cross the Berlin wall had resulted in shootings. Former American President Ronald Reagan had described an "evil empire" and spent vast sums of

⁵ Peter Hough, *Understanding Global Security* (Milton: Taylor & Francis, 2008): 2

⁶ Human Security Catia Gregoratti article published in encyclopaedia Britannica 14th Dec 2018

⁷ Oliver Richmond and Jason Franks, "Human Security and the War on Terror," in *Human and Environmental Security an Agenda for Change* (UK and USA : Earthscan, 2005): 27.

money on the creation and acquisition of new, ever-more deadly weaponry. World politics had been dominated by two superpowers, and rivalry between them had shaped how nations interacted with one another. Everything abruptly changed, and there was no longer any Soviet Union, Communism, or arms races. Moscow and the large portion of the world experienced the prevailing change. Peace in that time had unexpectedly become a reality, and many things impossible during cold war appeared feasible. In this setting, the idea of Human Security was born.⁸

Further, after the significant events of September 11, that specific new security issues came to the forefront questioning structural inequality on the basis of religion, gender, class and poverty. The global political landscape has become increasingly complex in the wake of the terrorist attacks on the US on September 11, 2001, as well as the ongoing conflicts in both Afghanistan and Iraq. As a result, various realms have experienced spectacular and less-than-spectacular collisions.⁹

The concept of security during the cold war was most often linked to theories of international relations that were typically supported by realist viewpoints that prioritised national integrity and sovereignty.¹⁰ The world order is characterised by realism as a system of conflicting, vested state actors operating in chaos.¹¹ Yet, in the 1990s, the discourse on security evolved to Human Security, highlighting the importance of integrated, global security systems of international intervention that supplement ineffective states' efforts to protect their citizens.¹²

The emphasis of the Human Security concept is on personal safety. It includes everything that empowers people such as Human Rights, socio economic and cultural rights, accessibility of healthcare and education, equality of opportunity, and effective governance.¹³

⁸ Shahrbanou Tadjbakhsh and Anuradha M Chenoy, *Human Security: Concepts and Implications* (London; New York: Routledge, 2007):1

⁹ Ken Booth, *Theory of World Security* (Cambridge University Press, 2007). 2

¹⁰ Vincenzo Pavone, Elvira Santiago Gomez, and David-Olivier Jaquet-Chifelle, "A Systemic Approach to Security: Beyond the Tradeoff between Security and Liberty," *Democracy and Security* 12, no. 4 (September 3, 2016): 225–46, <https://doi.org/10.1080/17419166.2016.1217776>.

¹¹ Emily Tripp, "Realism: The Domination of Security Studies," *E-International Relations*, 2013, <https://www.e-ir.info/2013/06/14/realism-the-domination-of-security-studies/>.

¹² Vincenzo Pavone, Elvira Santiago Gomez, and David-Olivier Jaquet-Chifelle, "A Systemic Approach to Security: Beyond the Tradeoff between Security and Liberty," *Democracy and Security* 12, no. 4 (September 3, 2016): 225–46, <https://doi.org/10.1080/17419166.2016.1217776>

¹³ Sané Pierre, *Human Security : Approaches and Challenges*. (Paris: Unesco, 2008):3.

From State Security to Human Security

For decades, state sovereignty has been a dominant factor in international politics, there were notable worldwide demands for individual security. This is notwithstanding the fact that the topic of Human Security or individual security has only been extensively argued before the 1990s. For example, the 1948 International Declaration of Human Rights and the Geneva Conventions and their supplemental protocols (1864/1944/1977) lay out normative and legal justifications that promote humanitarian ideals and attempt to protect people.¹⁴

In a 1978 report commissioned by the National Institutes for the Advancement of Research (NIRA) and Nomura Research Institute, it was proposed that national security threats should be addressed in a comprehensive and varied manner, depending on the nature of the threat, such as economic, political or military.¹⁵ That strategy was supported in a report prepared by a task force appointed by Prime Minister Masayoshi Ohira in 1980, which proposed three levels of national security measures for Japan: 1) self-help or self-defence 2) efforts to make the entire international system conducive to Japan's security; and 3) intermediate-level efforts to create a favourable security environment in the region. The three-tier concept has since become official policy, and it is widely supported by the people.¹⁶

The notion of comprehensive security has its roots in Japan's largely successful post-war security history. Tokyo's adherence to the "Yoshida Doctrine" during the early post-war years proved successful in defending the interests of the country. It permitted Japan to maintain its political and strategic alignment with the United States, restricting its political and military engagement elsewhere. Japan was able to concentrate almost exclusively on its own economic expansion.¹⁷

The Comprehensive Security Report (CSR) was analogous to the Cooperation Security Doctrine of the CSCE (Conference on Security and Cooperation in Europe) which focused on building trust and dialogue between East and West, whereas the comprehensive security report was all about North and South cooperation and how crucial it is for Japan to establish

¹⁴ Yukiko Nishikawa, "Human Security in Southeast Asia: Viable Solution or Empty Slogan?," *Security Dialogue* 40, no. 2 (April 2009): 213–36, <https://doi.org/10.1177/0967010609103088>.

¹⁵ Tsuneo Akaha, "Japan's Comprehensive Security Policy: A New East Asian Environment," *Asian Survey* 31, no. 4 (April 1991): 324–40, <https://doi.org/10.2307/2645387>.

¹⁶ *ibid*

¹⁷ Tsuneo Akaha, "Japan's Comprehensive Security Policy: A New East Asian Environment," *Asian Survey* 31, no. 4 (April 1991): 324–40, <https://doi.org/10.2307/2645387>. pp 325

partnerships with resource producing countries. According to the report, development assistance is Japan's only active activity in foreign affairs, and it is advocated that ODA (Official Development Assistance) be increased. Although the report gave more attention to the non-military aspect of security, it still mentioned the military aspects and suggested some solutions like more military spending and a new weapons system. The two primary reasons for the creation and adoption of this report were 1) The 1973-74 Oil Crisis brought the Japanese public to understand that the political economy of Japan is dependent on the stability and interdependence of the international society. 2) Due to pre-war militarism and the devastation of World War II, Japan preferred to follow high level of pacifism. After the demise of Prime Minister Ohira, the Comprehensive Security began to wither away, disappearing from mainstream Japanese Security debates. However, the non-military dimension of security continues to exist mainly as a strategy for economic security in Japan's foreign policy.¹⁸

The Cold War ended, but the threat posed by nuclear weapons to human civilisation did not. The danger of a false or unintentional nuclear launch cannot be overstated and there is no guarantee that terrorists will never acquire nuclear weapons, or that they will not use them once they acquire. It is widely accepted by experts that there is a correlation between the nuclear weapon, global and national instability. A broad definition of national security encompasses Human Security, and it is undeniable that nuclear weapons are a major cause of public concern. It is the responsibility of international law to create a framework for the elimination of nuclear weapons, which is essential for Human Security.¹⁹

The 20th century laid the foundation for the notion that individuals should be safeguarded from violent threats. Its emergence can be traced back to the work of non-governmental organisations (NGOs) namely the International Committee of the Red Cross (ICRC). However, 'Human Security' as a term for use was first defined in the United Nations Development Programme's 1994 (UNDP) Human Development Report. The rationale for its introduction and advocacy was straightforward: the state-centric realist approach to security that focused on the primacy of "state sovereignty" over "individual sovereignty" was

¹⁸ Giorgio Shani and Makoto Sato, *Protecting Human Security in a Post 9/11 World* (Springer, 2007) :86

¹⁹ Nanda P Ved, "Nuclear Weapons, Human Security, and International Law ," *Denver Journal of International Law and Policy* 37, no. 3 (2009): 331

increasingly outdated in an era where states no longer endured the existential danger posed by nuclear stand-off.²⁰

Human security according to the UN has five fundamental principles that it is “comprehensive, people centred, prevention-oriented approach to security that aims to tackle a wide variety of risks that people and communities face. Human security necessitates an integrated, bottom-up approach that takes into consideration grassroots concerns as well as real-world dynamics due to its context-specific character. This means that it's important for responses and strategies to be flexible enough to keep up with changing situations, so they can be useful and relevant.²¹ There is still disagreement on the scope of the concept, with some proponents advocating for a narrower understanding that only includes protection from violence, while others believe it should be broader to include protection from other threats as well.²²

The three main points of the debates highlighted the significance of a human security approach for policymakers. First, it can be viewed as a means of reducing the human costs of violent conflict. Second, it can be utilised to assist governments in meeting basic human needs, such as food and shelter. Third, it can be used to identify risks and vulnerabilities in populations, and provide them with social security.²³

During the time of the Cold War, the allies were obligated to remain loyal to the two hegemonic superpowers because to the actual and perceived compulsions of the global strategic balance of terror. To the greatest extent possible, the non-aligned nations took on the role of mediators and emergency responders during times of crisis. MAD (Mutually Assured Destruction) NUT (Nuclear Utilisation Theories) based "national security" was neither reassuring nor intellectually gratifying. Many thinkers and enlightened leaders from around the world searched for more rational and secure alternatives. In this particular regard, Canada, Japan, and Norway were in the vanguard. The United Nations Development Programme's (UNDP) vision of Human Security based on the idea to create a secure Europe in a better world, with keeping people at the first, and comprehensive security, was considered as a step

²⁰ Luke Johns, “A Critical Evaluation of the Concept of Human Security,” E-International Relations, 2013: <https://www.e-ir.info/2014/07/05/a-critical-evaluation-of-the-concept-of-human-security/>.

²¹“Human Security: An Approach and Methodology for Business Contributions to Peace and Sustainable Development,” n.d., accessed July 11, 2023.

²²Judy Smith-Höhn, “A Strategic Conflict Assessment of Zambia,” 2009.

²³ Vivienne Taylor, “From State Security to Human Security and Gender Justice,” *Agenda* 59 (April 21, 2011).

in the post-Cold War world's search for a new and more all-encompassing definition of security.²⁴

Mary Kaldor has identified three elements of Human Security Firstly; Human Security is concerned with the safety of people and the communities they live in. The third basket of Helsinki has the human dimension. Human security implies a commitment to human rights by emphasising individual security rather than state security, it does not, however, minimise the significance of more traditional state-centered dangers. Indeed, the possibility of an assault by an enemy state, for example, is a humanitarian threat.

Second, human security refers to the interdependence of freedom from want and freedom from fear, as well as material and physical insecurity. This is Helsinki's second basket, with an emphasis on scientific, cultural, and economic issues.

Third, human security is founded on the concept that international relations should not be governed by the war instead it should be governed by law. It seeks to extend the security based on law to the entire Euro-Atlantic area, which is included in the first basket of Helsinki process.²⁵

In 1975 the Helsinki Agreement was signed. This agreement was the initial step in bringing peace and human rights together. It consists of three baskets; First basket is of the security and peace: It is an agreement about maintaining the European territories status quo and the concept of non-use of force anywhere in the European Union. The scientific and economic cooperation was mentioned in the second basket, and respect for human rights was mentioned in the third basket.²⁶

In a world with weapons of mass destruction and where interdependence is tying nations together at random, for some the classical formulation is overly unilateralist in its emphasis on force. According to this point of view, a unilateralist conception of security must make way for a cooperative security approach. For others believe that the traditional formulation makes an error by limiting the scope of security to just include military dangers posed by other states. According to this point of view, competing states may employ other forms of threats to undermine the territorial integrity and domestic political order of one another.

²⁴ B Ramesh Babu, "From National Security to Human Security," *World Affairs: The Journal of International Issues* 20, no. 1 (March 2016):34

²⁵ Mary Kaldor, "Human Security," *Society and Economy* 33, no. 3 (December 1, 2011): 445–46,

²⁶ Ibid 442

These may include dangers to the environment, the economy, or culture. In addition, it is necessary to take into account the dangers to the territorial integrity and political order not only posed by other states, but even by natural disasters and a variety of non-state actors. Comprehensive security is one term that can be used to refer to this much more expansive concept of security, which broadens both the instruments and the sources of threat. A third and more basic critique of security goes even farther, suggesting that security cannot be limited to the well-being of the state. From this point of view, the protection and wellbeing of the state are assumed to be included in the traditional conception of security. However, welfare and protection of the individual citizen or human being is the primary concern, or at least it should be the primary concern. A conception of security that prioritises the sanctity of the individual is referred to as Human Security.²⁷

Since the middle of the 1990s, the idea has grown in popularity. After the cold war, it was used to describe state policies and to promote new global security and development priorities. But now, it has been used to support civil society groups' political advocacy on a wide range of current issues, including migration, civil war and climate change. Degree courses and research programs in human security have been created by academic institutions. However, Human Security idea is debatable. Its definition has been put out in a variety of ways, and various initiatives have been made to advance related global goals. A significant amount of literature has evolved that questions, supports, or explains the concept's additional value. Many international affairs professionals, particularly those working in the security and development sectors, continue to question its political and practical utility. Many criticise it for being imprecise and open to numerous interpretations, but it is still unclear exactly what purpose it serves. Is it a comprehensive conceptual paradigm, a new philosophy of international security, a standard, or just a term?²⁸

The Universal Declaration of Human Rights 1948, which firmly emphasises the primacy of the human being, states that acknowledgment of the inherent dignity and equal and inalienable rights of all members of the human family is the cornerstone of global justice, peace, and freedom. The President of United states Franklin Delano Roosevelt first used the phrase "freedom from fear and want" in his speech to Congress on January 6, 1941, when he listed the four freedoms intended to bring his country closer to the rest of the world freedom

²⁷ Kanti Bajpai, "The Idea of Human Security," *International Studies* 40, no. 3 (August 2003): 196

²⁸ Sakiko Fukuda-Parr and Carol Messineo, "Human Security," [Http://Www.gpia.info/Publications](http://www.gpia.info/Publications), 2011.

of worship, freedom of speech, freedom from fear, and freedom from want. Later, the Atlantic Charter, which was signed by President Roosevelt and British Prime Minister Winston Churchill on August 14, 1941, underlined freedom from want and freedom from fear.

They serve as the foundation for redefining security, which now sets its goal to achieve freedom from want and freedom from fear rather than the conventional notions of sovereignty, territory, or military might. Yet, a number of UN publications made an effort to construct a larger notion of security. The G77 established ties between underdevelopment and security in the middle of the 1970. The 'Brandt Commission', founded in 1980 also known as the 'Independent Commission on International Development Issues'. It stated that eradicating hunger and inequality was necessary for peace. The Palme Commission, an independent commission on disarmament and security, discussed morality in international relations in 1982. The 'World Commission on Environment and Development' now commonly known as Bruntland Commission 1987 report put a lot of emphasis on the connection between the environment and conflicts. The South Commission, which was presided over by Julius Nyerere, named deindustrialization, environmental threats, democratic shortcomings, and poverty as some of the causes of insecurity in 1990.²⁹

The 1994 'UNDP Human Development Report' which subtitled New Dimensions of Human Security introduced the Human Security concept, which emphasized on the well-being of people. The same document makes the argument that protection of territory from foreign attack has long been understood very narrowly, and it implies that Human Security entails much more than merely the absence of disputes. By doing this, the focus is explicitly shifted from State Security to Human Security. According to the UNDP report, Human Security also "includes protection from chronic threats such as hunger, disease, and repression as well as protection from sudden and harmful disruptions in the patterns of daily life whether in homes, jobs or communities". Seven types of security were listed as components of Human Security: economic security, food security, health security, environmental security, personal security, community security and political security³⁰

The contrast between the state security and of the people security was emphasised a year later by the Commission on Global Governance (1995). In the past, the UN and its institutions

²⁹ What is Human Security IIHR

³⁰"Human Development Report" (New York: Oxford University Press, 1994) :23

have frequently been effective trendsetters in global discourse, and over time, the term Human Security has attained a status similar to ideas like “sustainability” (a term coined by the World Commission on Environment and Development in 1987) and "good governance" (a term coined by the World Bank in 1989)³¹

The Human Security idea denotes a shift in the primary referent object of security, both in theory and in practise. We are no longer entirely focused on the state or national security, and traditional warfare (military security). Humanity must be considered in all spheres of life, including those of individuals, small organisations, and the global community worldwide. As originally stated in the 1994 UNDP report, security must be centred on "freedom from fear and freedom from want," as well as "the freedom of future generations to inherit a healthy environment.”³²

Human Security the Concept and its Dimensions

The Human Security idea first appeared hundreds of years ago in the works of Hobbes and Locke, and later in the works of Hume and Rousseau and has been used as a justification for the creation of the modern state, with Human Security as its primary guarantee. This concept has been implicitly accepted as the primary justification for the formation of nation states since the proclamation of the nation-state in 1648, the Peace of Westphalia. Canadian Prime Minister Lester Pearson proclaimed in 1968 that "people's peace and security should take precedence over state sovereignty” historical events contributed to this paradigm shift. In addition to the dissolution of the Soviet Union, globalization in its various forms has shifted the focus of public attention away from national security and defence and threats from military towards a more inclusive, people-centred approach, supported by the United Nations.³³

Based on empirical research the Human Security concept was developed after the cold war ended. Too many instances where states turned into instigators of insecurity, failing to uphold their duties to their subjects and even endangering their very survival, undermined respect for sovereignty. This period was also marked by the emergence of a range of new and sometimes unsuccessful international interventions in the areas of Bosnia, Kosovo and East Timor, as

³¹ Monica Den Boer and Jaap De Wilde, *The Viability of Human Security* (Amsterdam: Amsterdam University Press, 2008) :10

³² Ibid

³³ Alexander Lautensach, Sabina Lautensach, and Paul Bellamy, *Human Security in World Affairs: Problems and Opportunities* ([Prince George, BC], Victoria, BC: University of Northern British Columbia ;BCcampus, 2020):39

well as in Afghanistan. While it appeared that conflicts had been resolved, the underlying causes of these conflicts were not addressed. When the bi polar rivalry came to an end, new phenomena also began to emerge. International organisations, private investment firms, NGOs, and non-state entities new players who would actively participate in international relations appeared on the scene. Alongside there was a realization of the prevalence of threats that had not been adequately addressed such as, intra-state clashes, ethnic tensions, terrorism, forced migration, extreme poverty, HIV/AIDS, and pandemic, all of which are cross-border, closely linked, and potentially devastating to societies around the globe.³⁴

Environment, identity, crime, and welfare concerns have been reframed in the context of security since the 1990s. The introduction of a new term in the Human Development Report of 1994, which redefined security as "humane," and expanded the concept's application beyond just military dangers to include social, environmental, and economic risks, marked a turning point in this process. The study, which is supported by economists Amartya Sen and Mahbub ul Haq, is an annual assessment of the global development since 1990 as well as state-by-state situations of "human development" within the UN Development Programme. Mahbub ul Haq, argued that the developing Human Security concept imposes a new ethical value on humanity through the realization of shared dangers to our fundamental well-being.³⁵

The philosophical sciences and thinkers of the Renaissance and Enlightenment gave rise to the concept of Human Security. According to social contract philosophers like Thomas Hobbes and Jean-Jacques Rousseau, who argued that the human condition is rooted in a survival drive and a preference for permanence. A social contract is necessary to achieve a systematised society based on unchanging laws and a predetermined terminology for the notion of natural human rights. It can contribute to the maintenance of freedom, justice, and order. Philosophers have emphasised that people join communities and sign social contracts mostly out of a desire for peace and a need for security. Through the social contract, the state

³⁴ Shahrbanou Tadjbakhsh, "Human Security: Concepts and Implications with an Application to Post-Intervention Challenges in Afghanistan," September 2005:6https://www.sciencespo.fr/cepi/sites/sciencespo.fr.cepi/files/etude117_118.pdf

³⁵ Makaremi, Chowra. "7.5. Utopias of Power: From Human Security to the Responsibility to Protect" In *Militarization: A Reader* edited by Roberto J. González, Hugh Gusterson and Gustaaf Houtman, 218-222. New York, USA: Duke University Press, 2019: 4<https://doi.org/10.1515/9781478007135-044>

assumes the role of ensuring citizens' security, with security limited to preserving state sovereignty, safeguarding borders, and advancing the state's interests.³⁶

As societies evolve over time through development, such as from industrial to contemporary and global, and from a bipolar to a unipolar system, they shift from relatively safe security to risk societies. In order to accommodate the current national context of advancement informatics, a new security framework is required. Thus, unlike conventional security conceptions that see individual security through state security, Human Security is a dynamic concept. States' security cannot sufficiently ensure the security of individuals when people are used as the reference unit of analysis. The legal frameworks and threats to individual security have been disregarded by some states; this has been exacerbated by the emergence of conflicts between individuals and communities within a state, rather than solely between states. Human security has emerged as a tool for the development of new international social contracting. However, it should be noted that human security is not a substitute for state security; the two complement each other.³⁷

Although the term Human Security' is now used in a broad sense in a variety of circumstances, such as domestic violence and migration it has its roots in Cold War-era discussions about collective security. The key premise is that human life should be the primary focus of security policy. This statement has profound implications for the way in which security policy is thought and practiced, as it has been based on the supremacy of the state for many years.³⁸

The document Human Development Report 1994, which is frequently cited as the origin of the term's modern usage, observes that it is challenging to define Human Security precisely, because Human Security is easier to identify it when it is absent than when it is present, and most individuals are familiar with the concept of security. However, it defined Human Security into two categories "first safety from such chronic threats as hunger, disease and repression. And second, it means protection from sudden and hurtful disruptions in the patterns of daily life whether in homes, jobs or in communities." This view of security posits

³⁶ RULA ODEH ALSAWALQA, "Dialectical Relationship between Terrorism and Human Security: A Sociological Approach," February 10, 2001:276 <https://doi.org/10.5281/zenodo.4556274>.

³⁷ Ibid

³⁸ Sakiko Fukuda-Parr and Carol Messineo, "Human Security," [Http://www.gpia.info/Publications](http://www.gpia.info/Publications), 2011:2

that threats or causes of uncertainty can be attributed to natural or man-made factors, as well as to inadequate policy decisions.³⁹

The report also listed the seven components of Human Security: 1) Environmental security (access to a sanitary water supply, clean air, and a non-degraded land system), 2) Health Security (relative freedom from disease and infection) 3) Food Security (physical and financial availability to food), 4) Economic security (guaranteed minimum income), 5) Community Security (security of cultural identity), 6) Personal Security (security from physical aggression and threats), and 7) Political Security (protection of basic human rights and freedoms).⁴⁰

In reference to the famous US President Franklin Roosevelt 1941 The Four Freedoms speech The Report's comprehensive description of Human Security openly tries to capture both "freedom from want" and "freedom from fear," In addition, the Report asserts that human security is a universal concept, that its elements are intertwined, and that its implementation is best achieved through preventive measures rather than through direct intervention, and that it should not be confused with the more general idea of human social development.⁴¹

Freedom From Want and Freedom From Fear

The two contrasting Human Security schools. The first one is primarily concerned with "freedom from want," which refers to human requirements in terms of economy, health, food, social interaction, and the environment. The second school is narrower and adheres to the concept of "freedom from fear," which entails eliminating the threat of force or the use of force from people's daily lives. The concerns on its agenda include small weapons proliferation, child soldiers, impunity, anti-personnel mines, and more.⁴²

Long lasting peace necessitates a larger perspective that addresses issues like democracy and human rights, education and health, defence against environmental degradation, and the spread of lethal weapons. Hunger makes it impossible to feel secure, peace cannot be established without eradicating poverty, and that injustice makes it impossible to establish freedom. These components form the interconnected and mutually reinforcing foundations of

³⁹ Sakiko Fukuda-Parr and Carol Messineo, "Human Security," *Http://Www.gpia.info/Publications*, 2011:5

⁴⁰ Amitav Acharya, "Human Security: East versus West," *International Journal* 56, no. 3 (2001): 447, <https://doi.org/10.2307/40203577>.

⁴¹ Human Security Robert W. Hoag pp 38

⁴² Ibid 150-151

what is now recognised as the human centred idea of Human Security. And probably most importantly, no nation, no matter how strong, can achieve Human Security on its own. Moreover, no nation is immune to dangers and costs if it decides to forgo the multilateral collaboration that might assist in achieving this goal.⁴³

The Canadian approach, or the narrow view on Human Security which was pioneered by Foreign Minister Lloyd Axworthy, emphasises on the issues of civil rights violations and the oppression of innocent civilians during armed conflict. Therefore, it establishes a direct link between armed conflict and Human Security. It is essential to take prompt action in order to protect human security in the face of the devastating effects of war. Traditional approaches to war focus on military defence of territory, often disregarding the human cost of war. Human Security approaches argue that the victimization of innocent civilians is a key part of warfare, and is often an objective of combatants. Modern conflict trends, such as state collapse and civil war, which have resulted in a disproportionately higher rate of civilian victimisation and migration, particularly among children and women. This is violation of every acknowledged standard and rule of international law, some of which like the Genocide Convention even call for action to put an end to transgressions. This justification inevitably results in the conclusion that terrible human suffering must be alleviated. Even if doing so occasionally violates sovereign rights. Therefore, in the contentious field of human security, humanitarian intervention and other forms of coercion coexist.⁴⁴

Although operationalizing Human Security is challenging, the governments along with the non-governmental and international organisations try to implement the concept. Human Security and National/state security are frequently viewed as opposing or contradictory concepts. Yet, there are notable initiatives by governments and governmental agencies to implement Human Security. To encourage greater acceptance of human security, countries like Switzerland, Canada, Japan, and Norway, among others, include the components of Human Security in their foreign policy.⁴⁵

In the post-Cold War world, conflicts in places like Africa, Asia and Eastern Europe had killed millions of people. A coordinated international reaction was required in light of the

⁴³ Robert Grant Mcrae and Don Hubert, *Human Security and the New Diplomacy : Protecting People, Promoting Peace* (Montreal: Mcgill-Queen's University Press, 2001).

⁴⁴ Edward Newman, "HUMAN SECURITY and CONFLICT," *Human Security Journal*, no. 3 (February 2007):7.

⁴⁵ Yukiko Nishikawa, "Human Security in Southeast Asia: Viable Solution or Empty Slogan?," *Security Dialogue* 40, no. 2 (April 2009): 213–36, <https://doi.org/10.1177/0967010609103088>.

threat of ethnic cleansing, genocide, failing nations with no rule of law, and significant refugee flows. On the matter of Human Rights violation governments could no longer turn a blind eye in conflict zones around the world in an era of international communications. By broadcasting live footage of gruesome combat and the resulting human misery, the worldwide media helped to shape a developing global conscience. The ensuing "humanitarian imperative" (also referred to as the CNN effect when brought on by media reports) forced governments and individuals to come up with fresh programmes and regulatory measures to save lives and lessen human misery. In response, Lloyd Axworthy the foreign minister of Canada developed a Human Security policy which emphasized the importance of protecting innocent people during armed conflicts, as well as during peacetime reconstruction efforts.⁴⁶

Canada focused on the "freedom from fear" goal of UNDP as of 1996 advocating for the protection of individuals from both direct and indirect forms of violence, a state characterized by liberty from pervasive threats to individuals' rights, their security, or even their life, after initially criticising human security definition of the UN as being so "all-inclusive as to make it an unwieldy policy instrument because of the breadth of its approach."⁴⁷

The efforts of Canada's foreign minister Lloyd Axworthy, from 1996 to 2000, are largely responsible for the country's interest. Axworthy recognized the need to revise Canadian foreign policy in order to incorporate new strategies to address post-Cold War-related issues such as the suffering of children in conflict situations, the proliferation of terrorism, and the proliferation of drugs and the circulation of weapons. He demanded that these problems be resolved quickly and with shared accountability through initiatives that are guided by humanitarian principles. Some saw the adoption of Human Security concept by Canada's as an effort to save the nation from military irrelevance. Canada had to find a way to make a name for itself around the world as a middle state with limited military resources in order to distinguish itself from its strong neighbour to the south. In order to balance a strong heritage of non-intervention with the desire to participate more actively in international events, human security was added to the foreign policy agenda. At the same time, immigration restrictions were made to lessen security dangers to the country as a whole. The pressures from a large coalition of NGOs, which successfully fought for approving the treaty of banning landmines

⁴⁶ Walter Dorn, "Human Security: An Overview," Walterdorn.net, 2019, <https://walterdorn.net/23-human-security-an-overview>.

⁴⁷Shahrbanou Tadjbakhsh cited Lloyd Axworthy, "Introduction", Human Security: Safety For People in a Changing World, Concept paper of the Department of Foreign Affairs and International Trade, April 1999.

and the establishment of the ICC through Axworthy's work and official partnerships with the government, were also a factor in Canada's decision.⁴⁸

The Canadian Human Security policy is built on five priorities: a) safety of the public (developing cross-border expertise with the ability to respond to increasing cross-border threats such as terrorism, drugs trafficking and criminal activity.) b) civilians protection (establishing legal norms, lowering the toll of armed conflict on civilians, human rights field operations, and the use of military action in dire circumstances to put an end to atrocities and war crimes) c) conflict prevention (improving national and local capacities to manage political and social tensions without resorting to violence, strengthening the ability of the international community to resolve violent conflicts, and utilising targeted economic sanctions to lower the likelihood of civil war erupting); d) Governance and accountability (promoting enhanced accountability of public and private sector institutions, with a focus on establishing a successful International Criminal Court (ICC) and encouraging reform of security institutions, such as the military, police, and judiciary, in order to lower corruption, promote freedom of expression, and encourage corporate social responsibility) and peace support operations (improving the ability of the international community to carry out peace missions, addressing issues pertaining to women, and providing policy and civil experts to carry out difficult missions).⁴⁹

Freedom from want, basically the broader view of security incorporates identity needs, physical and personal safety. It therefore includes the seven approaches to security that is listed by the UNDP which includes:

1. Economic Security: that the individual should be guaranteed with a stable income from remunerative and productive work. Economic insecurity can be considered as one of the sources of political and social insecurity, fostering worldwide violence and unrest.
2. Food Security: that all the individuals should have economic and physical access to basic foods. It is a major issue on the global agenda, as extreme hunger, famine, natural disaster and environmental degradation exacerbate worldwide difficulties in this area.

⁴⁸ Shahrbanou Tadjbakhsh, "Human Security: Concepts and Implications with an Application to Post-Intervention Challenges in Afghanistan," September 2005:
[21https://www.sciencespo.fr/cepi/sites/sciencespo.fr/cepi/files/etude117_118.pdf](https://www.sciencespo.fr/cepi/sites/sciencespo.fr/cepi/files/etude117_118.pdf).

⁴⁹ Ibid

3. Health Security: refers to the minimum level of safeguarding the individuals from diseases and harmful lifestyles. In most of the developing countries disease has been a leading cause of death. These risks are devastating for poor individuals, particularly impoverished children, who are the most vulnerable.
4. Environmental Security: is focused on protecting people against the long-term man-made repercussions and natural calamities. The serious risks that people are facing today is global warming and climate change.
5. Personal Security: Its main goal is to protect people against physical violence, whether perpetrated by the state or by external states, by sub state actors or violent individuals, or (in the matter of children) by predatory adults. For example, violent crime is an element of personal insecurity.
6. Community Security: strives to safeguard individuals from the loss of traditional values as well as ethnic and sectarian strife. It concentrates on ethnic minorities who are particularly vulnerable.
7. Political Security: is about whether people live in a society that respects their fundamental liberties and human rights and allows them to achieve their dreams and goals. Human rights are an important component of political security.⁵⁰

Japan has yet another alternative definition that strikes a midway ground between those of the UNDP and Canada. It encompasses both freedom from fear and freedom from want to define Human Security. Former Japanese Prime Minister Keizo Obuchi once described the strategy in a policy speech, stating that it is a philosophy that takes a comprehensive view of all risks to human existence, dignity, and life and emphasises the necessity to respond to such threats. Japan's approach to Human Security emphasizes threats beyond traditional conflict-related contexts in order to see broader dimensions of threats. Although it adopts a more expansive and development focused understanding of human security, it does not downplay the importance of conflict resolution and peacekeeping. This viewpoint is evident in the Commission on Human Security's approach, to which Japan has made a strong commitment.⁵¹

⁵⁰ Robert J Hanlon and Kenneth Christie, *Freedom from Fear, Freedom from Want* (University of Toronto Press, 2016):7-8

⁵¹ Yukiko Nishikawa, "Human Security in Southeast Asia: Viable Solution or Empty Slogan?," *Security Dialogue* 40, no. 2 (April 2009): 213–36, <https://doi.org/10.1177/0967010609103088>.

Japan has been one of the top nations that has led and funded efforts to promote Human Security as a result of its aim to obtain a permanent seat in the UN. In the industry, it is the second-largest donor. As a result of Article 9 of the Japanese Constitution's ban on using force to settle disputes, Japan only has self-defence troops available for maintaining international security. Through its involvement in development assistance, Japan has been able to get around its military constraints while also contributing significantly to the region's economy. The Japanese government is committed to Human Security for reasons other than the constitutional limitations that forbid any involvement in the area of traditional security. They include the aim to play a pivotal regional role in the wake of the crisis of 1997 and also to win a permanent place in the Security Council of UN. The Asian crisis started as a monetary crisis, developed into a financial crisis very fast, and then widened into a full-scale economic crisis with socio-political repercussions that jeopardised regional security, demonstrating, if necessary, the interdependence of the countries involved. The 1997 events made the Japanese government aware of the region's fragile economic foundation and the necessity for Japan to take a bigger role in stabilising the region's economy by adopting a long-term agenda, which the human security concept was in a position to offer. A ministerial level programme that has proved to be effective in the area of Official Development Assistance (ODA) area and was highly liked by the Japanese public served as the basis in Japan's Human Security strategy. The CHS Today report's description of Human Security, according to the Japanese Diplomatic Bluebook, was comparable to the idea of development assistance that Japan has been putting into practise. As a result, in the Japanese foreign policy the agenda of Human Security is a complement rather than a replacement for traditional security concerns. Nonetheless, Japan's investment and leadership on issues that are concerned with Human Security have encouraged the formation of initiatives focused on development.⁵²

A report of the International Commission on Intervention and State Sovereignty, 'Responsibility to Protect' was published in December 2001. It was the Commission, led by Gareth Evans and Mohamed Sahnoun that undertook to study the relationship between the rights of sovereign states and the so called right of humanitarian intervention, they studied this topic in Bosnia, Somalia and Kosovo, but not in Rwanda. With varying degrees of success, the issue has been subject to international debate. The report focus was on to see if it

⁵² Shahrbanou Tadjbakhsh, "Human Security: Concepts and Implications with an Application to Post-Intervention Challenges in Afghanistan," September 2005:20
https://www.sciencespo.fr/cepi/sites/sciencespo.fr.cepi/files/etude117_118.pdf

would ever be right for states to use force against another state for the sake of protecting persons at risk in that other state, specifically military action. The report regularly made reference to Human Security, despite the fact that its main focus was on the complicated and divisive issues surrounding states' obligations to their own citizens.⁵³

Furthermore, the report concluded that human security is really indivisible using the example of 11th September, where 40% of individuals were non-Americans within the World Trade tower. Humanitarian disasters that happen in a far-off place of which we know little are a thing of the past. Hence, the report makes the case for a reorientation of national security objectives of not just including military spending but also internal social security in the context of highlighting the obligation nations have to safeguard the Human Security of their own citizens.⁵⁴

Human Security and Human Rights

Although the term 'security' is not explicitly mentioned in the human rights conventions, it is an integral part of human rights. The essence of the human rights system is freedom from want and freedom from fear, both of which are fundamental values of Human Security. The individual human being is considered to be the ultimate concern of both Human Security and human rights.⁵⁵

The fundamental elements of human rights are established by the rights outlined in the Universal Declaration of Human Rights (UDHR), International Covenant on Economic, Social, and Cultural Rights (ICESCR), and the International Covenant on Civil and Political Rights (ICCPR) that together make up the international bill of rights. They include the rights to liberty, life, personal protection and safety, equality and non-discrimination, a fair trial, privacy, family, participation and economic security as well as the rights for an adequate standard of living, education, health, and culture. The Banjul Charter also known as the African Charter on Human Rights & Peoples Right talks about the minimum requirements necessary for human growth, and their preservation and promotion play a key part in ensuring that the objectives of human security are realised.⁵⁶

⁵³ Sabina Alkire working paper pp 18

⁵⁴ Ibid 18

⁵⁵ Gerd Oberleitner, "HUMAN SECURITY and HUMAN RIGHTS," 2002: 14.
<https://www.files.ethz.ch/isn/31301/08.pdf>.

⁵⁶ ISSAfrica.org, "Chapter 2: Interface between Human Security and Human Rights: A Conceptual Overview," ISS Africa, 2008, <https://issafrica.org/chapter-2-interface-between-human-security-and-human-rights-a-conceptual-overview>.

Security and human rights are interdependent fields with a great deal of overlap that is necessary for both of them to function. For the UN human rights expert Bertrand Ramcharan,⁵⁷ Human Security is ultimately determined by the respect for human rights. Human Security is ultimately determined by the respect for human rights. He believes that the preservation of human rights is the most effective way to achieve personal, national, and global security. The maintenance of fundamental freedoms and individual rights is the basis of Human Security. In Hampson's view, human rights (in the sense of the rule of law), is only one part of the three-part classification of human security. Human rights / rule of law is a basic liberal principle that individuals enjoy the fundamental right to life, freedom and the pursuit of happiness, and that the global community has a responsibility to protect and promote these rights. In Hamson's definition, human insecurity is the root cause of the denial of fundamental human rights. According to Seidensticker's and Oberleitner's, human security and human rights are mutually beneficial. For instance, Human Security can assist in redirecting international law towards people's interests.⁵⁸

However, we also cannot deny that the link between Human Rights and Human Security. Both the concepts focus on the well-being of humans, rather than the state. Both aim to safeguard the individual rights and ensure security of the people. The people-centred approach in Human Security and Human Rights means that the rights of humans are not just for the individual, but also take into account the community. This is significant for the Human Security discussion because it gives people a stronger legal position.

The Human Security and Human Rights frameworks share many of the same defining features, including the idea that security and rights are interdependent and interconnected. Both frameworks also promote a holistic approach to solving problems, emphasizing the interconnectedness of issues and the importance of reinforcing positive rights-based cycles. Threats are also seen as interconnected, and security is seen as indivisible.

The protection of human dignity is a concern of both human rights and security. Human security originated as a means of defending human rights from dangers whereas human rights

⁵⁷ Shahrbanou Tadjbakhsh and Anuradha M Chenoy, *Human Security : Concepts and Implications* (London ; New York: Routledge, 2007): 123 cited Ramcharan, B Human Rights & Human Security, The Hague: Nijhoff Publishers

⁵⁸ Shahrbanou Tadjbakhsh and Anuradha M Chenoy, *Human Security: Concepts and Implications* (London ; New York: Routledge, 2007):123

developed in response human dignity violations. Both are based in morality, and both are aimed at protecting people from harm.

Both frameworks emphasise the universal and indivisible nature. Certain rights and security elements are not generally defined. The human rights language, i.e. rights, methods of indivisibility and interdependence and goals are mutually reinforcing. Human security policies support human rights; violations of human rights weaken human security. Human security is the moral and ethical side of human rights. Human security identifies threats and obligations. This helps to determine the relevant rights in a given situation.

Most importantly, the content material of human security and human rights is undeniably similar, despite the fact that they been phrased differently. There is a close link between freedom from fear and first-generation human rights, including political and civil rights. Second-generation human rights include 'freedom from want' financial and social rights that were promoted by prior communist nations and appear to be applicable to people's movements today.⁵⁹

Although one could argue that the human rights framework is the one that is most similar to human security, there are still a few things that set it apart. A collection of legal requirements and international agreements that do not apply to human security promote human rights. Human rights have a longer history than the human security framework, The latter has only existed in the international arena for ten years. The two discourses do not conflict, because protecting human rights is only one aspect of human security. It makes an effort to comprehend potential challenges to these rights as well as the kinds of institutions and governance structures needed to uphold them. Under the cover of sovereignty, states were shielded from outside criticism and frequently got away with violating human rights. Human rights impose the obligation on others, whereas human security makes the case for the duty of the state to safeguard both states and citizens.

Human security calls for an urgent response to situations when human rights breaches are probable but not certain, such as conflict situations, natural disasters, and intercommunity tensions. The slogan of Human Security is prevention/mitigation of catastrophes, which entails actions not protected by human rights, such as social safety nets and communal coping mechanisms. According to Berlin's idea of negative liberty, human rights frequently centre on

⁵⁹ Ibid pp125-126

protection from public authority, i.e. the state. Human Security has several implications. It transcends the private-public distinction to highlight a variety of vulnerabilities where state and non-state actors are not sufficiently constrained by international humanitarian law and human rights. Human security also finds new ways to address these threats, highlighting the role of non-state players in sustaining human security, whereas human rights is a legal construct and subject to interpretation. Human security has significant non legalistic components. It focuses on the day-to-day activities and social networks of people. This non-legislative, contextual approach could help advance human rights and provide a basis for preventing human rights violations. The Human Security paradigm minimises inappropriate governmental discretion in the exercise of rights while fostering the most favourable environment for their achievement. Seidensticker contends that human rights cannot be disregarded or infringed upon in the sake of safety.⁶⁰

Human Security vis-a-vis Human Development

The UNDP launched the first Human Development Report in 1990 under the direction of Mahbub ul Haq, with significant intellectual assistance from individuals such as Nobel laureate Amartya Sen. The first report covered the definition and measurement of human development and emphasised the significance of equity in growth if it were to really improve people's lives and enhance the opportunities. Most importantly, it suggested the Human Development Index (HDI) as a way to gauge how well a country is doing in terms of human development. This was calculated using information on life expectancy, level of education, and gross domestic product (GDP) per capita⁶¹

The focus of the HDRs from 1991 and 1992 was on the finance of human development as well as its global implications. In a foreshadowing of what was to come, the 1992 volume raised the possibility of diverting some of the peace dividend to development. The 1993 HDR brought to a forefront third fundamental theme in the human development debate. It emphasised that people's empowerment was critical both in the state and in markets, not just because popular participation improved outcomes, but also because development was about the empowerment of people to take control of their lives.⁶²

⁶⁰ Ibid127

⁶¹ S Neil Macfarlane and Yuen Foong Khong, *Human Security and the UN: A Critical History* (Bloomington, Ind. ; Indianapolis, Ind.: Indiana University Press, 2007): 144

⁶² Ibid 145

This fusion of development and security discourse was expanded in the 1994 Human Development Report, titled *New Dimensions of Human Security*. What began as a tentative theme in a report emphasizing on people's participation in processes and institutions became the focal point of a sustained effort to redefine security along human development lines.

The 1994 Human Development Report served as the foundation for UNDP's contribution to the Copenhagen World Summit on Social Development of 1995. The UNDP proposed an ambitious agenda for the summit in the 1994 HDR, urging conference participants to embrace the Human Security concept and adopt a comprehensive set of measures, including a new world social charter, human development targets, and a global human security fund to address threats that are common.⁶³

Human development is said to be the process of broadening human possibilities; because only in the context of human security can three dimensions of economic well-being, human resource growth, and identification of essential societal needs for the flourishing of human development be realized. Some people think of human development as equality in terms of equal opportunity, consistency in terms of taking accountability for future generations; and proper productivity in terms of investment in human resources, and enhancement, that is to say, people must achieve a certain level of personal development so that they can choose basic needs; all of the above requirements can be fulfilled only if human security is at the top of the social pyramid. Without human security, we face a crisis.⁶⁴

Another fascinating perspective of Human Security concept is that of Amartya Sen, who approaches human security focusing on the pursuit of four aspects.

1. An emphasis placed on the individual human lives (as opposed to the general technocratic view of national security – the preferred definition of security in the military context).
2. Acknowledging the importance of society and its structures in providing a safe and secure environment for individuals to exist in a productive manner. (avoiding a socially detached view of each person's dilemma and potential for salvation, which is emphasised in certain but not on all religious contexts)

⁶³ Ibid 148

⁶⁴ Behrouz Ajdari and Seyed Esmaeil Asgharpour, "Human Security and Development, Emphasizing on Sustainable Development," *Procedia - Social and Behavioral Sciences* 19 (2011): 43, <https://doi.org/10.1016/j.sbspro.2011.05.105>.

3. A considered focus on dangers of people's lives rather than the general extension of effective freedom (in contrast to the more general goal of promoting human development)
4. A decision to emphasise the most fundamental human rights (rather than the full range of human rights) with a focus once more on the downside.⁶⁵

Security for people is crucial, but it's not the only one. Human security is one of the many goals, and all of them deserve our attention. There's a great deal of complementarity between human security and other fundamental concepts that have gained traction in international social discourse, including "human development" (promoted magnificently by the late Mahbub ul Haq) and "human rights" (reinvented in a new conceptual context that draws indirectly on classic promotion of Tom Paine's advocacy of "rights of man" or the "vindication of rights of women" by Mary Wollstonecraft more than two centuries ago).⁶⁶

Human security is related to 'human rights,' 'human development,' 'national security,' and 'individual commitment,' but it is distinct from each of these concepts. It is equally crucial to have a clear understanding of the differences at play as it is to recognise the inter linkages and interconnectedness of human security with other significant issues that are being discussed in the context of modern global discourse.

The vast majority of people are worried about the safety of their lives but also of the safety of the lives of other people who are similar to them. This overarching issue concern must be addressed directly, and any notion of security in more distant contexts (e.g., military security or national security) can be combined with it to the degree that it improves human life.⁶⁷

The concept of development as freedom and the relationship between freedom and human security is based on the principle that freedom is the primary end of development and its primary means. The fundamental idea here is that different kinds of freedom (political freedom, social freedom, economic freedom, etc.) are important in their own right, but they also complement one another. Each type of freedom serves a purpose in and of itself, but it also acts as a means to other freedoms.

⁶⁵ Mary Martin and Taylor Owen, *Routledge Handbook of Human Security* (Hoboken: Taylor and Francis, 2013):17-18

⁶⁶ *ibid*

⁶⁷ *ibid*

The concept of freedom is expansive and encompasses not only the concept of freedom from uncertainty, but also the concept of freedom to improve the quality of life and the capacity of individuals to pursue activities they value and have a reason to do so. Human security, therefore, is linked to one aspect of human freedom, and that is what the Commission on Human Security Report all about We're especially worried about 'downside risks' when it comes to human security.⁶⁸

Environmental Security

In 1987, at the 42nd Session of the General Assembly of the United Nations, Environmental Security as a concept was specifically brought up for the first time. Since then, it has become an important theoretical and empirical component of security studies. In 1988, at the Stockholm Conference on Environmental Stress and Security, the Swedish minister of environment and energy stated, “so far most of these statements of interconnections between environmental destruction and security are hypothetical.”⁶⁹

It is generally acknowledged that environmental degradation and shortages represent a threat to national security. Therefore, there is a direct connection between environmental deterioration and national security. Environmental security is now universally acknowledged to be an important component of nation states' national and regional security frameworks. The concern for environmental security has been growing in recent years. Furthermore, emerging complicated challenges that imperil environmental security are a cause for concern. Such challenges have emerged as a result of interactions between threats at a regional and global level on environmental security. In the Asia-Pacific region, these include the rapid economic development, the demand for natural resources, population growth (particularly in South Asia), pollution, poverty, and climate change. These issues of environmental security and governance are complex, with numerous independent decision-makers having an impact on one another, and because they are characterised by patterns of circular causation, or feedback, leading to potential tipping points which can have serious consequences.⁷⁰

⁶⁸ *ibid*

⁶⁹ Satyendra Singh Narwaria, “Conceptual Aspect of Environment Security: Evidence from India and Bangladesh,” *Management of Environmental Quality: An International Journal* 30, no. 1 (January 14, 2019): 36–46, <https://doi.org/10.1108/meq-08-2017-0084>. pp 37

⁷⁰ Colonel P K GAUTAM, *ENVIRONMENTAL SECURITY INTERNAL and EXTERNAL DIMENSION and RESPONSE* (2003; INDIA: KNOWLEDGE WORLD, 2003). Pp 37

The increasing depletion of natural resources has resulted in resource scarcity and environmental degradation on the one hand, and the subsequent intra- and inter-state conflict has increased concern for environmental security throughout the world. The discussion over the links between environment and security shifted in the mid-1990s, from the idea of nation-state security from interstate conflict to a society centered focus on human insecurity as a trigger for civil strife. Making the connection between human insecurity and nation-state security, a commentator pointed out that even when a state has secure borders, its citizens may not be shielded from the effects of environmental deterioration, and that this human insecurity can result in instability at the state level.⁷¹

Since the onset of the Industrial Revolution and the establishment of the contemporary trading nation-state, there has been a significant surge in the production of commodities and energy consumption. Additionally, there has been a substantial rise in international trade of goods and services, reaching a hundredfold increase. During the same time frame, the global populace has undergone a significant surge, escalating from one billion to over six billion individuals, and presently, it has reached a staggering 8 billion. Furthermore, the majority of the population now enjoys a longer lifespan, higher consumption levels, and better educational opportunities compared to their predecessors.

Despite efforts to mitigate environmental change, the potential threats it poses to Human Security persist. The extensive magnitude of consumption and pollution in modern, high-energy societies has resulted in significant reductions in primary forest coverage, biodiversity decline, depletion of fish populations, land deterioration, water pollution and scarcity, coastal and marine degradation, contamination of living organisms by chemicals and radioactive substances, and alterations in climate patterns and sea-level elevations. These environmental alterations under consideration are deemed "global" due to their pervasive nature. Furthermore, certain pollutants, such as greenhouse gases and radioactive waste, bear global ramifications.⁷²

The first initiative for treating environment as a security issue originated from the UN. It was the Secretary General of the UN who gave the theme "Give Chance to Earth" on the World

⁷¹Richard Matthew and Bishnu Upreti, "Environmental Change and Human Security in Nepal," n.d., accessed June 26, 2023. Pp 8

⁷² Jon Barnett, Richard A Matthew, and Karen L. O'Brien, "Global Environmental Change and Human Security: An Introduction," in *Global Environmental Change and Human Security* (United States of America.: Massachusetts Institute of Technology, 2010). Pp 1

Environment Day on 5th June 2022. Some of the international landmark events concerned with environmental and ideas on the subject at the level of UN are;

1. UN Conference on Human Environment 1972 at Stockholm that led to the formation of the UN Environment Programme (UNEP). Following that, there has been growing understanding of the serious environmental issues like climate change, ozone depletion, and biodiversity loss.
2. The World Commission on Environmental and Development 1987 published Our Common Future known as the Brundtland Report which was named after the chairperson, Ms Gro Harlem Brundtland which was mainly focused on the concept of sustainable development.
3. The Vienna Convention 1985-87 followed by the Montreal Protocol on Ozone Destroying Substances (ODS). This aimed at banning and phasing out chlorofluorocarbons (CFS) and hydrofluorocarbons (HCFCs) in order to restore the health of the protective stratospheric ozone layer.
4. The UN Conference on Environment and Development (UNCED) 1992 in Rio De Janeiro also known as Earth Summit. The relationship between the environment and development has been formalized. In addition to forest, climate change, and biological diversity accords, Rio established Agenda 21, an extensive guide to sustainable development. It was also emphasized that poverty and wealth put a strain on the environment, that industrial societies must reduce their environmental impact through a sustainable pattern of production and consumption, and that developing countries require assistance in developing environmentally friendly economies.⁷³

Following the release of the UNDP Human Security Report in 1994, a subsequent report was published in the year 1995 under the guidance of Shridath Ramphal, focusing on the topic of global security. The Ramphal Commission on Global Governance report titled 'Our Neighbourhood' put forward that the scope of global security should be widened beyond the traditional emphasis on state security to include the security of individuals and the security of the environment. This foresaw the emergence of a strong correlation between security and the environment. In order to study the empirical and operational validity in a variety of concerns, including those of security connected to human, energy, environment, and food, a huge number of scholars and organisations from all over the world have increasingly been

⁷³ Colonel P K GAUTAM, *ENVIRONMENTAL SECURITY INTERNAL and EXTERNAL DIMENSION and RESPONSE* (2003; repr., INDIA: KNOWLEDGE WORLD, 2003). Pp3

interested in this broader concept of security. The Report also emphasised the importance of maintaining the integrity of the planet's life-support systems and preventing conflict and war by eradicating the political, military, economic, social, and environmental conditions that pose a threat to human and environmental security.⁷⁴

The Third Conference of Parties to the UN framework Convention on Climate Change adopted the Kyoto Protocol in 1997. The developed countries were asked to cut their greenhouse gas emissions, such as CO₂, by 5.2% below 1990 levels. This resulted from the recognition that using fossil fuels had contributed to global warming and that, unless carbon dioxide the main offender was regulated, the warming would create dangerous conditions.⁷⁵

The OECD (Organisation for Economic Cooperation and Development) is currently at the forefront of efforts to redefine the concept of development. This process comprises of three distinct but interrelated components, namely, economic well-being, social development, and environmental sustainability and regeneration. At the risk of oversimplifying a very complex new framework for redefining development, it is abundantly evident that the OECD intends to advance a more comprehensive understanding of what constitutes development. This vision incorporates the "strengthening of human and institutional capacities," which extends beyond the alleviation of poverty and the promotion of economic growth. One of the common threads connecting these endeavours to redefine security and development is a shared worry about the consequences of environmental change.⁷⁶

Linking Environment Security with Human Security

To examine the connections between the environment and security, the U.S. Central Intelligence Agency established an environmental centre in 1977. The use of defoliants by the U.S. military in Southeast Asia during the Vietnam War brought to the world's attention both the intentional and unintentional damage that war does to the environment. The Additional Protocol I to the 1949 Geneva Convention on the Protection of Victims of International Armed Conflicts was signed in 1977. It was the first of two major treaties that focus on

⁷⁴ Rajan Bhattarai, "Human Security : Concept and Criticism," in *Human Security in Nepal: Concepts, Issues and Challenges* (Heidel Press Pvt. Ltd. Dillibazar, Kathmandu: North-South) Kathmandu, 2013). Pp 22-23

⁷⁵ Colonel P K GAUTAM, *ENVIRONMENTAL SECURITY INTERNAL and EXTERNAL DIMENSION and RESPONSE* (2003; repr., INDIA: KNOWLEDGE WORLD, 2003). Pp

⁷⁶ Geoffrey Dabelko, Steve Lonergan, and Richard Matthew, "State-of-The-Art Review on Environment, Security and Development Co-Operation for the Working Party on Development Co-Operation and Environment OECD Development Assistance Committee," 2000. Pp 9

environmental importance as a reflection of how the world was worried especially after the environment was being damaged in Vietnam. This essentially humanitarian accord has yet to be ratified by a number of major powers, including the United States, France, and the United Kingdom. However, it is noteworthy that the objections raised by these countries do not primarily revolve around the environmental concerns addressed in the agreement. The 1977 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD Convention) was the second post-Vietnam treaty to define "widespread, long term and severe damage to the natural environment" more strictly.⁷⁷

The security and international development framework established after World War II, effectively catered to the NATO signatories and their adjacent regions. The security umbrella provided by NATO served to safeguard and unify affluent democratic nations, while also presenting less affluent nations such as Turkey with a security and development paradigm that gained greater recognition and admiration over time. The International Monetary Fund (IMF), World Bank, General Agreement on Tariffs and Trade/World Trade Organisation (GATT/WTO), and United Nations (UN) have served as effective multilateral mechanisms for managing global economic and developmental challenges. These institutions have successfully prevented the resurgence of economic policies that prioritise one's own interests at the expense of others, as was observed during the inter-war period. The gradual realisation of the importance of transnational environmental issues was met with a response from the global governance structure, which culminated in the creation of conventions aimed at safeguarding international waters, the ozone layer, and other vital components of the global environmental commons.⁷⁸

There is growing agreement that environmental deterioration leads to conflict and instability, as well as growing fear that the amount of conflict that is caused by the environment may rise. Today, there is an increasing demand for security institutions to assume the responsibility of safeguarding the accessibility to environmental resources not only within other countries but also in the global commons. Furthermore, these institutions are expected to extend their assistance towards humanitarian endeavours, many of which are strongly linked to environmental concerns. In prospective scenarios, the utilisation of coercive

⁷⁷ Colonel P K GAUTAM, *ENVIRONMENTAL SECURITY INTERNAL and EXTERNAL DIMENSION and RESPONSE* (2003; INDIA: KNOWLEDGE WORLD, 2003).

⁷⁸ BEN SLAY, "ENVIRONMENT, SECURITY, and DEVELOPMENT CHALLENGES in the 21ST CENTURY," in *Energy and Environmental Challenges to Security* (Netherlands.: Springer, 2009). Pp 33

measures may be contemplated as a viable course of action in addressing the issue of transboundary pollution, as well as in upholding the principles and regulations of international environmental law. Security experts understand, though, that conflict at times can be a good force, indicating a need for institutional change or capacity building. The pressures imposed on institutions by environmental deterioration and resource depletion could be such a signal. And in an era of deadly weapons, the majority would prefer that force be reserved for extreme cases and that all efforts be made to strengthen and modify institutions so that they can effectively handle conflict before it develops into widespread violence and war. In many instances, improving security and assisting nations in adapting to changing environmental conditions can be achieved more effectively through the promotion of human rights, strengthening the state and civil society, and decreasing poverty than through the use of force. These are explicit goals outlined in the DAC Guidelines on Conflict, Peace, and Development Cooperation⁷⁹

The primary cause of violent conflicts throughout history has been conflict over territory and resources; such conflicts are likely to worsen as resources become scarcer and the environmental quality continues to deteriorate. Many times, resource scarcity has led to violent conflict within and between states. There will be disputes and rivalry over transboundary resources; like river waters that flow between countries. Of the 261 major rivers in the world, 176 run through two countries, 48 run through three countries, and 37 run through four or more countries. Each of these rivers shares water. Regarding the water sharing agreement, several of these nations are embroiled in some kind of dispute. As many as 80 nations, including almost three billion people or two-fifths of the world's population, currently suffer from major water shortages; hence, with the rise in water scarcity, the potential of conflict originating from the distribution pattern of river flows cannot be ruled out. In light of the geopolitical context, the situation has the potential to stoke regional tensions and set the stage for violent resource-related conflicts. This kind of insecurity can have a significant impact on the resource challenges at either the intra- or inter-state level, and it also carries the possibility of spreading to the international level.⁸⁰

⁷⁹Geoffrey Dabelko, Steve Lonergan, and Richard Matthew, "State-of-The-Art Review on Environment, Security and Development Co-Operation for the Working Party on Development Co-Operation and Environment OECD Development Assistance Committee," 2000. Pp5

⁸⁰Yogesh Nair, "Environment as a National Security Concern :APerspective," *Journal of the United Service Institution of India* CXLI, no. 589 (July 2012). Pp 4-5

Human security conceptualizations can no longer disregard the fact that people and places are interconnected in a globalised world, and that environmental change processes will affect not just the vulnerable and insecure, but also humanity's collective security, both now and in the future. Those who are concerned with human welfare, human rights, and human development have occasionally viewed human security with suspicion, as it runs the risk of influencing what is already being addressed in other discourses.⁸¹

In fact, the discussion on development ethics seems to reflect Amartya Sen and Martha Nussbaum's capabilities approach, which arguably captures the essence of human security. It focuses on the demands, rights, and principles of people and groups living in stressful environments. However, the explicit identification of the spatial, temporal, and social relationships between threats and responses is what human security adds. Human security refers to both the welfare of people and communities as well as the collective security of humanity in a changing global environment.⁸²

The Scientific and Technical Advisory Panel (STAP) recommended paying more attention to environmental security in the report of its 5th GEF Assembly (2014). It emphasizes the significance of taking steps to ensure better human health, safety, well-being and livelihoods, as well as social equity and environmental justice.⁸³

Following the Cold War and in reaction to the 1970s oil crisis, initial discussions on environmental security began within the context of discourse on national security. The term "environmental security" first emerged in international policy debates with the release of the Brundtland Report, *Our Common Future*. Environmental deterioration was first identified as a concern to national and international security in the 1970s, but it has since been positioned as the next important national security threat. In contrast, the United Nations Development Programme (UNDP) in 1994 included environmental security in its list of the seven major threats to human security.⁸⁴

⁸¹ Karen O'Brien, Linda Sygna, and Johanna Wolf, "A Changing Environment for Human Security," in *A Changing Environment for Human Security Transformative Approaches to Research, Policy and Action* (2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN Simultaneously published in the USA and Canada by Routledge 711 Third Avenue, New York, NY 10017: Routledge, 2013).pp 33

⁸² Ibid 37

⁸³ Da Nang and Viet Nam, "ENVIRONMENTAL SECURITY: DIMENSIONS and PRIORITIES," 2018, https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.STAP_C.54.Inf_06_Environmental_Security.pdf.

⁸⁴ Nathan Morrow et al., "Protective Pathways: Connecting Environmental and Human Security at Local and Landscape Level with NLP and Geospatial Analysis of a Novel Database of 1500 Project Evaluations," *Land* 11, no. 1 (January 1, 2022): 123, <https://doi.org/10.3390/land11010123>.

In recent years, the United Nations has been actively engaged in addressing the security implications of climate change. The Human Development Report 2007-2008, titled "Fighting Climate Change: Human Solidarity in A Divided World", places particular emphasis on the future generations and the most vulnerable individuals in the world, who will be the first and most vulnerable to the effects of climate change due to a lack of adaptation. The report draws attention to the fact that climate change is a major impediment to human progress and is already having a detrimental effect on the international community's efforts to alleviate extreme poverty. Notably, the report does not mention traditional security institution like the military in its proposed remedies; rather, it emphasizes that only global concerted efforts will be effective in reducing emissions.⁸⁵

The connections between human security and environment are unquestionably close and complicated. Human security is inextricably tied to people's access to resources and their ability to adapt to changes in the environment while human activities and conflicts directly and indirectly cause environmental change. A number of implications, including those on health, political instability, economic productivity, and so forth, can result from environmental change. Environmental risks can also have an impact on a variety of issues, including people, families, communities, social organisations, different identity groups, governments, geographically dispersed diasporas and different biological species. Even single environmental threat has the potential to be harmful on many different scales, ranging from the household to the planet. Some environmental problems are widespread and have a big impact, (i.e. climate change) while others are localised. To sum up all of these impacts also have a temporal component. The lives of people today can be significantly impacted by environmental change. These changes might continue into the future and have an effect on future generations.⁸⁶

According to John Barnett, who defines environmental security as "the process of pacifically reducing human vulnerability to human-induced environmental degradation by addressing the root causes of environmental degradation and human insecurity."⁸⁷ This definition combines

⁸⁵ Rita Floyd, *Security and the Environment: Securitisation Theory & US Environmental Security Policy*, Amazon (Cambridge University Press, 2014):180.

⁸⁶ Sanjeev Khagram, William Clark, and Dana Firas Raad, "From the Environment and Human Security to Sustainable Security and Development," *Journal of Human Development* 4, no. 2 (July 2003): 289–313, <https://doi.org/10.1080/1464988032000087604>. pp 294

⁸⁷ A. Marquina, "Environmental Security and Human Security," *Environmental Challenges in the Mediterranean 2000–2050*, 2004: 18, https://doi.org/10.1007/978-94-007-0973-7_1.

cited Barnett, J. (2001) *The Meaning of Environmental Security*, Zed Books, London

environmental deterioration with human-caused degradation, taking into account the fact that people are not in opposition to nature but rather a part of it. The environment is not the primary referent of security; rather, that role belongs to human beings. The issue with this definition is that it takes into account only man-made environmental problems and ignores natural phenomena, such as natural disasters, which have a significant influence on the safety of humans. Such environmental challenge that cannot be committed by humans may become a security concern when conservation, adaptation, mitigation, and risk reduction actions are concerned and implemented. If those measures cannot be applied to the natural disasters because they cannot control or prevent hazards the question may arise whether they can be considered security issues.⁸⁸

The GECHS Global Environmental Changes & Human Security is a key project of The International Human Dimensions Programme. The GECHS initiative aimed to develop integrated research on global environment change and human security. The project initially began in response to six key challenges in global environmental change research. First, the relationship between environmental change, insecurity and poverty needs to be understood within a theoretical framework and conceptual way. Second, there was a lack of adequate empirical research on environmental change, that threaten human security, including research on the impacts of different economic and social processes. Third, the level of collaboration between scholars, nongovernmental organisations, and policymakers engaged in knowledge production was deemed insufficient. Fourth, it was crucial to understand why certain communities and organisations were successful in adapting to environmental change while others failed. Fifth, studies on the environment and security did not sufficiently address issues of inequality and poverty. Lastly, it was determined that mechanisms for the early warning in environmental change, particularly in areas of high vulnerability and insecurity, were required. To conclude, the project aimed to create a fresh and unique viewpoint on the connections between security and environmental change. The science plan for the project acknowledged the significance of spatial levels of analysis in the investigation of the human aspects of global environmental alteration, including the utilization of social and cultural settings.⁸⁹

⁸⁸ A. Marquina, "Environmental Security and Human Security," *Environmental Challenges in the Mediterranean 2000–2050*, 2004: 18, https://doi.org/10.1007/978-94-007-0973-7_1.

⁸⁹ Karen O'Brien and Jon Barnett, "Global Environmental Change and Human Security," *Annual Review of Environment and Resources* 38, no. 1 (October 17, 2013): 379, <https://doi.org/10.1146/annurev-environ-032112-100655>.

The project's immediate output was the three edited volume which contained summaries and syntheses of the GECHS research. The first book, titled *Global Environmental Change and Human Security*, contains a compilation of research on the connections between human security and environmental change, as well as the interconnections between conflict and violence. First, it is generally accepted that democratic institutions reduce the risks that environmental change poses to human well-being. Market liberalization can reduce human insecurity, but their distributional impacts and their contributions to inequality should be noted. Second, simplistic portrayals of security risks associated with global environmental change may lead to inadequate policy responses. As a result, there is a need for grounded scientific research as well as science that is free of ideological biases and preconceptions that shape many narratives about poor and vulnerable people. The research also identifies the need for stronger integration of human security research, environmental change research and sustainable development research. Global environmental change is central to all human security assessments and policies.⁹⁰

Climate Change, Ethics and Human Security, the second book emphasizes on presenting climate change as a human security issue rather than an environmental one. The research presented in the book, which highlights the economic, social, and ethical justifications for addressing climate change fairly and equitably. It is necessary for climate change discussions to integrate the insights of the humanities and social sciences in order to be more effective. It calls for a “new science” of climate change that critically examines the institutional, social and human context and prioritises discussions of policy on matters of ethics, justice, accountability, and human security. Such new science would recognise that many of the key challenges posed by climate change are not solvable by scientific or expert responses alone, but rather require new debates and discussions, new research questions and new paradigms of public debate and policy.⁹¹

A Shifting Environment for Human Security the third book: *Transformational Approaches to Research, Policy, and Action* With a focus on issues related to climate change, this book offers case studies, critical analysis and comments on current environmental. The book underlines the importance of transformative strategies that question many of the assumptions that underpin the systems, institutions, and ideologies that maintain global environmental

⁹⁰ Ibid 380

⁹¹ Ibid 380

change and human insecurity. It considers human security to be a choice that is linked to values, decisions, and behaviours.⁹²

Environment Security as a Component of Human Security

According to Jon Barnett, a number of connected developments that began in the 1960s are what made environmental security a prominent issue in security studies. The first was the rise in environmental awareness in so-called industrialised countries. During this time, a number of incidents and events sparked the development of the environmental movement. In that era, one of the most remarkable books was *Silent Spring* by Rachel Carson, which raised environmental awareness among the general public by alerting them to the hazards that chemical pesticides like (Dichlorodiphenyltrichloroethane) DDT pose to everything in nature, from animals to the food chain. In addition, many of the most well-known non-governmental environmental organisations, including Greenpeace (1971), Friends of the Earth (1969), and the World Wildlife Fund (1961), were formed during that period.⁹³

The second significant event that contributed to the concept of environmental security advent was when academics began to criticise the conventional idea of security and mainstream security discussions in their writing starting in the 1970s by highlighting their inability to address environmental issues at the levels of national and international security.⁹⁴ According to Buzan (1991), the environment is the fundamental foundation upon which all other human endeavours rely. Discussions of any other referents are meaningless in the absence of a habitable environment.⁹⁵

Harold and Margaret Sprout, who authored "Toward a Politics of Planet Earth," 1971 and Richard Falk, who released "This Endangered Planet" in 1971. In their book, these two analysts made the claim that the notion of security can no longer be based solely on military might and that instead, governments should work together to address shared environmental issues since they constitute a threat to both national stability and world peace. Environmental security studies have continued to focus on these core concepts of international environmental interdependence and shared security danger.⁹⁶

⁹² Ibid

⁹³ Rajesh Kumar, "Redefining Security: An Environmental Approach," *IJSDR1904062 International Journal of Scientific Development and Research*, April 2019: 282. <https://www.ijsdr.org/papers/IJSDR1904062.pdf>.

⁹⁴ Ibid

⁹⁵ Paul D Williams, *Security Studies* (Routledge, 2008):8

⁹⁶ Rajesh Kumar, "Redefining Security: An Environmental Approach," *IJSDR1904062 International Journal of Scientific Development and Research*, April 2019: 282. <https://www.ijsdr.org/papers/IJSDR1904062.pdf>.

The environment as a security issue started to gain significant attention in the late 1980s with the publishing of numerous essays in policy journals.⁹⁷ The fundamental realisation that environmental challenges must now be considered intrinsic parts of social, industrial, and economic systems rather than auxiliary issues is what creates the vital push to develop environmental security as a policy system. This dynamic shift in the environment from "overhead" to "strategic" occurs at many various scales within businesses, industries, and society as a whole, and while each situation is unique in some specifics, they all share many underlying commonalities.⁹⁸

As the environmental consequences of industrialisation have become more apparent over the past 200 years, the intricate interactions between ecological and social systems have taken centre stage in many academic fields. Nonetheless, it is only in the past 35 years environmental activism become urgent and received widespread attention, Scientific proof supports the numerous and harmful ways in which humans are modifying their life support systems. As evidence of the scope and complexity of environmental change has grown, so has interest in its implications for national and regional security. The Cold War end brought an upsurge of policy and academic activity motivated by worries concerning the connection between "environmental change" and "security." The US National Security Strategy embraced the idea of "environmental security" in 1991.⁹⁹

Nina Graeger¹⁰⁰ least four compelling arguments for establishing a theoretical and practical connection between security and environmental changes brought on by human activity.

First, the security of humans and all life on Earth is seriously threatened by environmental degradation. Our living conditions can and do alter drastically as a result of water and air pollution, soil erosion, deforestation, and other factors brought on by both civilian and military actions. Due to this, various definitions of environmental security have placed a strong emphasis on the sustainable use and preservation of the human environment.

⁹⁷ Geun Lee, "Environmental Security in East Asia: The Regional Environmental Security Complex Approach," *Asian Perspective* 26, no. 2 (2002): 77–99. <https://www.jstor.org/stable/pdf/42704361.pdf>.

⁹⁸ Braden R. Allenby, "Environmental Security: Concept and Implementation," *International Political Science Review* 21, no. 1 (January 2000): 5, <https://doi.org/10.1177/0192512100211001>.

⁹⁹ Brian, Shaw & Lowi, Miriam. *Environment and Security: Discourses and Practices*.

¹⁰⁰ Nina Græger, "Environmental Security?," *Journal of Peace Research* 33, no. 1 (January 1, 1996): 109-12. https://www.academia.edu/24516890/Environmental_Security.

Second, degradation of the environment can lead to conflict, as it can be seen as a consequence of poor resource management, which in turn can arise from conflicts between different countries.

Third, military security considerations must include predictability and control, which are crucial components in preserving the environment. Under certain conditions, irreversible environmental deterioration or dramatically changing ecological systems may raise the possibility of violent conflict.

Fourth, a cognitive connection between security and the environment has been established. It is now acceptable for mainstream politicians to advocate for a security strategy that is ecologically conscious. Although environmental security may still primarily be a politically appealing concept, environmental sustainability has in fact entered the realm of "high politics" in many Western nations.¹⁰¹

Reports from the Rio de Janeiro 1992 United Nations Conference on Environment and Development (UNCED) and the World Commission on Environment and Development (WCED), as well as proceedings from other conferences, have confirmed the notion that economic development is essential in order to improve quality of life and wellbeing. However, in order to be sustainable, economic development must take into consideration economic, social, political, and environmental elements that are in line with a strong ethic of equity, as well as aspects of resource depletion and ecosystem health. The political, economic, social and environmental systems are in fact intertwined; any decisions affecting one of them will necessarily have an impact on the others.¹⁰²

In the post-Cold War era, political conflict factors other than major power rivalry have attracted significant policy and academic attention. Concerns about global climate change, acid rain and ozone depletion have at times made global environmental security an worldwide political concern. There is also an expanding body of academic and political literature on the relationship between the environment, the lack of renewable resources and violence. Part of this literature is motivated by concerns about political instability and collapse of states caused by environmental degradation and lack of resources.¹⁰³

¹⁰¹ Nina Græger, "Environmental Security?," *Journal of Peace Research* 33, no. 1 (January 1, 1996): 109-12.
https://www.academia.edu/24516890/Environmental_Security

¹⁰² Brian, Shaw & Lowi, Miriam. *Environment and Security: Discourses and Practices*.

¹⁰³ *Ibid* 84

Barnett argued that by protecting the rights of society's most vulnerable and promoting peace, welfare and justice, a human centred approach to environmental security made sense morally and practically because caring for the welfare of the most vulnerable means caring for many of the sources of future environmental damage. He argued that legitimate institutions are essential for both human and environmental well-being for managing the environment in a way that is fair to all people and for future generations, Barnett stated the need to have a human-centred approach to environmental security that emphasizes the need for cooperation and inclusion.¹⁰⁴

Over the last decade, there has been a growing debate on environmental degradation, poverty, and the relationship between the security and environment. Early literature on security and environment tended to be generic and empirical. Following this, many other authors have attempted to create more solid justifications for the relationship between security and environment by focusing explicitly on the role of environmental degradation and resource depletion as potential sources that can lead to violent conflict. As a result, the security of people, communities, states, and regions could be seriously threatened. Levy (1995a) referred to the general discussions on the nature of security and the contribution that environmental degradation makes to insecurity and conflict as the "first wave" of environment and conflict research. Levy (1995b) referred to the subsequent research as the "second wave" since it sought to show a connection between the environment and conflict.¹⁰⁵

The idea that security may be threatened by environmental degradation coincides with the movement to define security more broadly to include ideas of human wellbeing in situations where armed conflict is not immediately expected. The problem could be better defined in terms of insecurities. It enables one to take into account various non-traditional security challenges as well as the fundamental problems of equity and poverty. It is also multi-dimensional, which enables us to bring up questions of rights and obligations while functioning on all dimensions, from the individual to the global.¹⁰⁶

Security has traditionally been viewed as avoiding harm or danger by using force. Conflict, war, crimes, robbery, theft, terror, and other such things were frequently associated with

¹⁰⁴ Environment and Human Security: "Towards Freedom from Hazard Impacts" Hans Gunter Brauch

See Barnett, Jon, 2001: 34-35 The Meaning of Environmental Security. Ecological Politics and Policy in the New Security Era (London – New York: Zed).

¹⁰⁵ Brian, Shaw & Lowi, Miriam. Environment and Security: Discourses and Practices.

¹⁰⁶ Ibid 72

security. This idea has gradually broadened and begun to connect ideas of security to a person's ability to survive in a certain setting. The environment security was used as a conceptual set of guidelines within the national security realm by the US security establishment. Environmental security gradually merged with national security plans in countries like the USA. The word "environmental security" was used by the World Commission on Environment and Development (WCED) in the context of sustainable, in its 1987 report, "Our Common Future", establishing a direct connection between environmental security concerns and development. Environmental security was brought up in the Human Development Report 1994 by the UNDP, which also made connections between the environment and development. Prior to this, the terms "environment" and "security" were disassociated. Security was all about keeping people safe and secure, usually by using force, environment was often taken to refer towards the surrounding atmosphere, natural forces, and living conditions.¹⁰⁷

The damages caused to the environment have been increasing globally in the last decades. Several factors explain the recent surge in interest in the topic. First, as the superpowers' ideological and military conflict subsided, there was a space in Western public discourse for others' concerns. Second, the 1988 summer of scorching heat and drought heightened public and media attention to global environmental change within North America. Though these two factors were mostly considered as circumstantial however the third factor that has contributed a real shift in the science community's understanding of global environmental problems. The environment, especially the earth's climate, used to be seen as relatively resilient and stable against human insults. Today, it's widely accepted that the Earth's climate has many local equilibriums that are not very stable.¹⁰⁸

In 1987, for instance, geochemist Wallace Broecker reflected on recent polar ice-core and ocean-sediment data: "What these records indicate is that Earth's climate does not respond to forcing in a smooth and gradual way. Rather, it responds in sharp jumps which involve large scale reorganization of Earth's system. . . . We must consider the possibility that the main

¹⁰⁷ Bishnu Raj Uprety, "Environmental Security Concepts Issues and Problems," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South), 2003): 211.

¹⁰⁸ Thomas F. Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict," *International Security* 16, no. 2 (1991): 80, <https://doi.org/10.2307/2539061>.

responses of the system to our provocation of the atmosphere will come in jumps whose timing and magnitude are unpredictable."¹⁰⁹

The discovery of the ozone hole over the Antarctic in the mid of 1980s marked a major turning point in the study of nonlinear or threshold impacts in complex environmental systems. This event provided stark evidence of the fragility of the environment in response to human intervention, of people' potential to have a huge impact on the ecosystem on a global scale, and of our inability to predict how the system will evolve.¹¹⁰

Human Security Environment and Development

Human Security and development are inextricably linked and mutually reinforcing. Governments and individuals can shift their focus beyond survival to the possibility of improving their conditions in a peaceful environment. Similarly, when a society expands, it can afford more welfare networks, hospitals, doctors, internal security operations, schools, and demining activities. In contrast, as Kofi Annan, the then-UN Secretary-General, stated in his UN Report "In Larger Freedom," "we will not enjoy security without development, development without security, and neither without respect for human rights. Unless all these causes are advanced, none will succeed." Conflict hinders development, whereas underdevelopment can lead to conflict.¹¹¹

In the 20th and 21st centuries the roots of insecurity have shifted from being external to being mostly internal in some nations, States have become a source of insecurity in other regions rather than being a source of security. This viewpoint is consistent with the Human Security Commission's findings which points out that the State remains the primary source of security. However, it frequently disregards its security responsibilities and occasionally even poses a threat to its own citizen. Human security therefore refers to the necessary transformation of not assuming that the existence of the State necessitates the safety of its residents. It is a shift that calls into question the notion that obtaining a large army with cutting-edge military gear would imply security for a country's citizens. Human security must be viewed as a

¹⁰⁹ Wallace Broecker, "Unpleasant Surprises in the Greenhouse?" *Nature*, Vol. 328, No. 6126 (July 9, 1987): 123-26

¹¹⁰ Thomas F. Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict," *International Security* 16, no. 2 (1991): 81

¹¹¹ Brendan M. Howe and Suyoun Jang, "Human Security and Development: Divergent Approaches to Burma/Myanmar," *Pacific Focus* 28, no. 1 (April 2013): 121, <https://doi.org/10.1111/pafo.12001>.

supplement to state security, as well as a way to advance human rights and support human development.¹¹²

Human security goes further in addressing the challenge of identifying developmental risks that are often overlooked in the human development discourse. First, protecting people's lives and wellbeing cannot be done only through development. Conflicts and war, catastrophic events like natural disasters, and sudden crises, or as Amartya Sen's describes it as, "sudden titution," that cannot be solved purely through human growth, can all erode development achievements. For instance, the 1997–1999 the global financial crisis led to a sharp reduction in government budgets for social-sector programs in Asia, despite the fact that there had been considerable progress in human development in terms of life expectancy, adult literacy, nutrition and health care. Consequently, the needs of the poor were not met and people were left in poverty. This led to a re-emergence of poverty for some groups that had previously experienced it, while for others it was a new experience, both in terms of resources and opportunities for health care and education, people were rendered poorer. Human development had not been successful in mitigating the damage caused by sudden crises.¹¹³

Secondly, conventional development has the potential to jeopardise long-term as well as immediate human security. According to this theory, development itself contains the root of human security's fundamental purpose. The dangers that human security is designed to fend off are evidence of its limitations. Development is by definition a transitional process, which leads to instability and insecurity.

Finally, development and security imperatives have begun to overlap due to the shifting global order and emerging threats. Nef contends that much of the presumptive superstructure supporting international relations, security, and developmental studies has become irrelevant in the era of post-Cold War world. Development and security were philosophically and practically divided between 1945 and 1989. National security was discussed in terms of an East and the West conflict, whilst the North and the South divide were seen as a development issue. It was necessary to look at security and development from a negative point of view, with the potential to win and lose together, rather than from the zero-sum perspective after

¹¹²Fatima Hajaig, "PGA 28 Th Annual Parliamentary Forum on Human Security December 4 -5 Human Security and Challenges for the 21 St Century," accessed July 11, 2023: 3.

¹¹³ Shahrbanou Tadjbakhsh and Anuradha Chenoy, *Human Security: Concepts and Implications*, Routledge & CRC Press, 2007: 99.

1989, when the focus of security shifted to civil wars, internal dynamics, natural resources, ethnic competition, etc.¹¹⁴

The onset of violent confrontations has been linked to development, according to research. It is now well recognised that underdevelopment is a role in insecurity, fuelling crime, terrorism, and conflict. Eighty percent poorest nations of the world have seen violent crime since the 1990s. The World Development Report 2000/2001 emphasises how war was exacerbated by the failure of development in Sierra Leone and Bosnia. People are drawn to violent leaders because of poverty, which has been acknowledged as a factor in conflict. According to Brinkerhoff, citizens are less likely to engage in crime or be recruited into insurgency if kids are in school, work prospects are available, and families have faith that their well-being will improve. Policymakers now recognise economic disparity, underdevelopment, and poor governance as the primary causes of violence.¹¹⁵

Human security adds the crucial component of "downturn with security" to the goal of human progress, which is "growth with equity". Human security recognises that people can experience sudden instabilities and sufferings as downturns results like economic and financial crises, conflict, illness, and natural disasters. They not only ruin years of progress but also create situations wherein complaints can cause tensions to rise. Human security is therefore motivated by ideals related to security, stability, and sustainability of development achievements in addition to its focus on human well-being.¹¹⁶

The environment provides all of the essential resources required for survival. The environment provides raw materials to our industry, food for our people, fuel for our transportation, and so on. The environment also absorbs waste that is produced by our development activity. This means that for developmental activity, the environment serves as both a source and a drain. For instance, inland water bodies provide fish, water for cultivation, and other resources to village economies. Additionally, they serve as a catchment area for extra fertiliser and pesticides that may leak from agricultural fields. We cannot examine development in a vacuum from the environment that fosters it for this reason.

¹¹⁴ Ibid 100

¹¹⁵ Sasha Jespersen, "A Critical Analysis of the Security-Development Nexus," research.stmarys.ac.uk (Routledge, December 1, 2016): 24 <https://research.stmarys.ac.uk/id/eprint/1356/>.

¹¹⁶ Hans Günter Brauch, *Environment and Human Security: Towards Freedom from Hazard Impacts*, Google Books (United Nations University, Institute for Environment and Human Security (UNU-EHS), 2005), https://www.google.co.in/books/edition/Environment_and_Human_Security/ZyfvQEACAAJ?hl=en.

Development projects that are exclusively focused on boosting financial gains and ignore issues related to the wellbeing of people and the environment may have unfavourable effects.¹¹⁷

A number of effects, including those on health, political instability, economic productivity and so forth, can result from environmental change. Environmental threats can also have an impact on a variety of issues, including people, communities, families' social organisations, different identity groups (children, women, ethnic groups, etc.), diasporas not geographically concentrated, governments, and different biological species. Even a single risk to the environment might possibly have negative repercussions at numerous scales, ranging from the domestic to the global level. Although many environmental issues are confined to a certain area, others are systemic in character and affect multiple scales simultaneously (for example, climate change). All of these effects have a temporal component as well. The lives of people today can be significantly impacted by environmental change. It is possible that these shifts will continue into the foreseeable future and have an effect on the lives of future generations.¹¹⁸

By concentrating primarily on dangers, chances to enhance Human Security related to the environment are missed. People's livelihoods, wellbeing, and chances for fulfilment can all benefit greatly from protecting and improving the environment. In spite of the fact that environmental degradation makes it more likely that people will be deprived, displaced, and disempowered, there is a chance that ecosystem integrity will lower the risk of these things happening.

When seen on a smaller scale, or at the local or micro-level, there are numerous examples of how an enhanced environment has created opportunities for human security. These opportunities include the better chances of surviving, the realisation of basic rights, and an increase in human capacities. For instance, using community led, decentralised, affordable technology and institutional setups, there is enormous potential to improve access to sanitation and water management. These include demand side management, low and no water sanitation technology, and revived traditional water harvesting techniques.¹¹⁹

¹¹⁷ Kiran Chhokar, Mamata Pandya, and Meena Raghunathan, *Understanding Environment* (SAGE Publishing India, 2004): 266-267.

¹¹⁸ Sanjeev Khagram, William Clark, and Dana Firas Raad, "From the Environment and Human Security to Sustainable Security and Development," *Journal of Human Development* 4, no. 2 (July 2003): 294

¹¹⁹ *Ibid* 295

Environmental problems, which are considered politically safe by many governments, provide an opportunity for people and communities to take part in decision-making for their own safety and development, even in some of the most oppressive political systems in the world. Environmental concerns often provide the neutral and non-threatening basis on which marginalized groups and communities can build their voices and take part in project creation, design and implementation.¹²⁰

In addition to the International Geosphere-Biosphere Programme (IGBP), other programmes such as the International Human Dimensions Programme (IHDP), the World Climate Research Programme (WCRP), and DIVERSITAS have been important contributors to the field of research on biodiversity since the 1990s, for coordinating global environmental change research, mobilising the scientific community, and educating the public and policymakers about the issue.

Global Environmental Change (GEC) refers to societal and natural changes that have had an impact on humanity as a whole and will continue to have an impact on people who are both responsible for the change and frequently its victim. However, its originators and those most susceptible to and impacted by it are not always the same. The ecosphere and the anthroposphere are both impacted by global change. The ecosphere consists of the atmosphere (climate system), lithosphere (earth crust, fossil fuels), hydrosphere (water), and biosphere (life), pedosphere (soil), whereas the anthroposphere is concerned with populations, social organisations, knowledge, and culture.¹²¹

Security and development should almost always be connected conceptually and practically. In reality, this calls for constant communication and involvement between the groups affected by each of these at much higher levels than had been the case up to this point in order to reduce misconception and increase cooperative action. The foundation for development and sustainable security is provided by emerging perspective from the "rights" and "risks" framework in the field of sustainable development. When it comes to making the shift towards sustainability, the field of sustainability science focuses on establishing a connection between the human imprint on the biosphere and the co-evolving condition of the human and environmental conditions. The idea of vulnerability, which may be understood as risk of harm to a system, subsystem, or component of a system is likely to suffer damage as a result

¹²⁰ Ibid 296

¹²¹ Hans Günter Brauch, *Environment and Human Security: Towards Freedom from Hazard Impacts*, Google Books (United Nations University, Institute for Environment and Human Security (UNU-EHS), 2005): 12-13. https://www.google.co.in/books/edition/Environment_and_Human_Security/Zy_fvQEACAAJ?hl=en.

of being exposed to a hazard, serves as the connection to the concept of security. When attempting to link the sustainability science and a vulnerability analysis framework to human security paradigm, it is very necessary to place particular attention on the human situation as one of the essential components of the definition. The analysis of human security focuses on who is vulnerable, how the behaviour of specific individuals in specific environments and conditions influences susceptibility, and what steps could be taken to reduce or mitigate risk.¹²²

Human Security Environment and Sustainable Development

Currently, Human Security has taken the place of global security, making it necessary to give humans the primary role, as Petros Ghali noted in 1994. He claims that in place of the prior commitments made to provide territorial security by the use of firearms, a new commitment has been made to ensure Human Security through development.¹²³

Human Security and environment are undoubtedly closely related. Natural resource access and environmental vulnerability are two of the most important elements of Human Security, and human activities and conflicts have a significant direct and indirect impact on environmental change. In recent years, it has become more and more obvious that a large portion of the interaction between environment and people that is crucial for sustainable development takes place in what are known as the "missing middles." Hazards, or challenges to environment and possibilities for sustainable development, don't primarily appear at local or global scales, but rather at intermediate scales, where both overarching trends and local specifics converge. Similar to that, sustainability is typically attained through measures that address current issues while concentrating on long term objectives through a series of intermediate range "sustainable" transitions.¹²⁴

One of the most important problems that every nation in the world is dealing with is ensuring sustainable development. In order to safeguard the environment and the basis of natural resources while also considering the interests of future generations, economic growth must be ensured. The growing human population has made environmental impacts that have

¹²² Sanjeev Khagram, William Clark, and Dana Firas Raad, "From the Environment and Human Security to Sustainable Security and Development," *Journal of Human Development* 4, no. 2 (July 2003): 302

¹²³ Behrouz Ajdari and Seyed Esmaeil Asgharpour, "Human Security and Development, Emphasizing on Sustainable Development," *Procedia - Social and Behavioral Sciences* 19 (2011): 43, <https://doi.org/10.1016/j.sbspro.2011.05.105>.

¹²⁴ Sanjeev Khagram, William Clark, and Dana Firas Raad, "From the Environment and Human Security to Sustainable Security and Development," *Journal of Human Development* 4, no. 2 (July 2003): 290.

detrimental effects on the biosphere. The disparity between human requirements and the biosphere's capacity to provide for them is widening as a result of humans demands increase. The global consumption of mineral resources doubles every ten years, and over 90% of resources are wasted, causing significant environmental damage.¹²⁵

The survival of both the natural world and humankind is in jeopardy in such circumstances. The National governments must create efficient state-led development plans in order to preserve a sustainable state of the environment and prevent global shocks. Analysis of the sustainable development of economic and social structures was the focus of the United Nations Conferences on Environment and Development (Rio de Janeiro, 1992) and Sustainable Development (RIO+20, Rio de Janeiro, 2012), which brought together the work of numerous diverse research teams.¹²⁶

The World Commission on Environment and Development later known as the Brundtland Commission in their work titled “Our Common Future” has defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. The commission's work has served as an inspiration since then for several previous “(e.g., Rio Declaration, Agenda 21, Commission on Sustainable Development, Millennium Development Goals, etc.)”, as well as current sustainable development initiatives, especially the post 2015 development agenda which was necessary by "the elusiveness" and "limitations" of the Millennium Development Goals.¹²⁷

The member states of the United Nations have come up with 17 sustainable development goals which should be achieved by 2030. Sustainable development should guarantee the stability of physical and biological systems from an environmental perspective. The health of local ecosystems is crucial in this situation because it affects the overall stability of the biosphere. Environmental Sustainability refers to an ecosystem's ability to retain structure and functionality in the face of external and internal forces.¹²⁸

¹²⁵DjamiliaSkripnuk, Kseniia Kikkas, and Ekaterina Romashkina, “Sustainable Development and Environmental Security in the Countries of the Circumpolar North,” *E3S Web of Conferences*, 2019, <https://doi.org/10.1051/e3sconf>.

¹²⁶ *ibid*

¹²⁷ Jeremiah O. Asaka, Alice A. , and OluokoOdingo, *Human Security and Sustainable Development in East Africa*, Routledge & CRC Press (Routledge, 2022):1.

¹²⁸DjamiliaSkripnuk, Kseniia Kikkas, and Ekaterina Romashkina, “Sustainable Development and Environmental Security in the Countries of the Circumpolar North,” *E3S Web of Conferences*, 2019, <https://doi.org/10.1051/e3sconf>.

Conclusion

Human Security is a people-centered approach that has been received a lot of attention in recent years. It is based on the fundamental idea to keep the individuals at the centre; it is a notion that is likely to remain in the international discussion indefinitely. Its definition and application are still an ongoing matter of debate and evolving experience. However, the struggle to find the correct ends and means is a natural process with numerous successes and failures. The idea of Human Security will gain attention in application and wider adherence as people become more aware of how interconnected the globe is and as they understand their obligations to one another in the "global village".

As the early proponents of the human security paradigm, Japan and Canada have worked to encourage a radical change in the way that security studies and policy are conducted. They pioneered the discourse, adopted the Human Security principles, and included them as important elements of their respective foreign policy.

Environment Security as term started gaining relevance after the 1980s with the rising global problems such as global warming or the ozone layer's depletion. This chapter has dealt with the issues of environment security and how environment insecurity has a direct impact on Human Security. The ecological foundation of human security is being threatened by major issues like global warming and overconsumption. The situation is complicated by certain attempts to promote economic growth having a negative environmental impact.

The next chapter will focus on the two countries which are taken for the study i.e. Nepal and Bhutan. These two countries are specifically chosen because both the countries share a lot of similarities. Both are mountainous landlocked small countries sandwiched between the two emerging powers India and China which has the power to hinder or help the development of the countries. Both countries are seeing tangible signs of climate change already, most notable shrinking glaciers. As both these countries rural population are dependent on agriculture and forests makes them vulnerable to climate change.

Chapter III

Human Security and Challenges to Environment Security in Nepal

Introduction

Nepal is a sovereign nation situated in the South Asian region, geographically positioned between India and China. It is a land-locked country¹. The country is characterised by abundance of mountainous terrain, encompassing a total land area of 147,516 square kilometres. The region known as Terai, which constitutes the northern extension of the Indo-Gangetic plains, accounts for 17% of this area, while the Churia hills and mid-hills (Mahabharat) comprise 12.78% and 30%, respectively. High mountains and the high Himalaya occupy 20% and 24% of the country's land area, precisely 14%, of the country is characterised by a permanent snow cover. The geographical coordinates of the country fall between 80° 04' and 88° 12' East longitude and 26° 22' and 30° 27' North latitude. The country's dimensions span 885 km from the East to the West and 145 to 241 km from the North to the South. Nepal represents two distinct bio-geographical realms, namely the Palaearctic and Indo-Malayan. It is a crossroads for Southeast Asian, Northeast Asian, and Mediterranean tracts.²



Source of the map: <https://www.researchgate.net/publication/352155539/figure/fig2/AS:1031316468428800@1622896415214>

¹Shardul Agrawala et al., "ENVIRONMENT DIRECTORATE DEVELOPMENT CO-OPERATION DIRECTORATE Working Party on Global and Structural Policies Working Party on Development Co-Operation and Environment DEVELOPMENT and CLIMATE CHANGE in NEPAL: FOCUS on WATER RESOURCES and HYDROPOWER," pp9

²"Country Environment Note Nepal," 2013-2017

As of November 2021, the total population of Nepal has increased to 29.2 million, representing a notable rise from the 2011 population estimate of 26.4 million. Despite the increase in population, the growth rate has exhibited a noticeable decline from 1.35 percent in 2011 to 0.92 percent in 2021, when compared to the projected global growth rate of 1.01 percent in 2020; the country's population growth rate is much slower.³

The Kathmandu Valley has been a site of uninterrupted human habitation for approximately nine millennia. However, it was not until the year 1768 that the Gurkha monarch, Prithvi Narayan Shah, successfully consolidated the small kingdoms of Kathmandu, Patan, and Bhaktapur, thereby establishing the sovereign state of Nepal.⁴ The Shah dynasty's territorial ambitions were impeded by the military conflict with the British between 1814 and 1816, which resulted in much diminished territory of Nepal yet resolutely self-reliant Nepal. The Shah monarchy, which had been in power until 1846, was succeeded by the Rana family who assumed the position of prime minister, established marital ties with the royal family, and governed the kingdom through a ceremonial monarch until 1950.⁵

The political landscape of Nepal underwent significant transformations in 1951 and 1990, which were instigated by exogenous shocks. The demise of the British Indian Empire constituted a pivotal catalyst for political transformation in Nepal during the year 1951. In 1989, India enforced an economic embargo on Nepal as a punitive measure against the Nepalese administration for procuring weaponry from China.

India's blockade fortuitously coincided with the third wave of democratisation that was underway globally. In this context, India sought to advance its security objectives under the guise of promoting democracy in Nepal. The alterations in the political landscape were not solely attributed to external factors. The endogenous factors within the nation played a pivotal role in shaping these advancements.⁶

By 1990, sustained protests prompted the government to agree to a new constitution restoring multiparty democracy, sparking the formation of over a hundred political parties as well as numerous non-governmental organisations (NGOs), newspaper, and other politically

³ CBS (2021) Nov. Preliminary Results of National Census 2021.

⁴ Richard Matthew and Bishnu Upreti, "Environmental Change and Human Security in Nepal," pp 137

⁵ Bishnu Upreti, "Environmental Stress and Demographic Change in Nepal: Underlying Conditions Contributing to a Decade Human Security View Project Making Women Count for Peace: Gender, Empowerment and Conflict in South Asia View Project SPECIAL REPORT • ENVIRONMENTAL STRESS and DEMOGRAPHIC CHANGE in NEPAL," pp 32

⁶ PRAKASH nEPALI and Phanindra Subba, "Civil-Military Relations and the Maoist Insurgency in Nepal," *Small Wars & Insurgencies* 16, no. 1 (March 2005): pp 83

involved groups. Despite the significant political transformations that occurred, the pace of social change remained sluggish. In 1994, the United People's Front, which represented the political left, experienced a fragmentation when Comrade Prachanda, established the Communist Party of Nepal-Maoists, also known as CPN-M. The Maoist insurgency, which commenced in 1996, was purportedly a response to the perceived inadequacy of development efforts during the period of 1994-1996. The Maoist faction claims to have meticulously prepared for this uprising, which they refer to as the People's War. The disintegration of Nepali society from 1996 to 2006, when the war ended, caused close to 13,000 deaths, over 200,000 internal displacements, and 1.8 million emigrations.⁷

Nepal was going through a challenging period of transformation. The Comprehensive Peace Agreement (CPA) of 2006 served as the bedrock for the Interim Constitution of 2007. It effectively dissolved the Constituent Assembly and the government, with the aim of fundamentally restructuring the state, including its key institutions like the judiciary, legislative branch, and executive branch (including security and bureaucracy). The principles, practises, applications, and limitations of the reorganisation of the state institutions are the subject of considerable study and debate in this context. Security is one of those topics that has historically been kept private (discussing security matters with people who aren't in the security field was seen as an intrusion and a threat to the security itself), has limited access to experts, and has low public interest (due to self-censorship or risk aversion tactics). Only after the CPA was signed did the security sector debate begin, and even then, it was only among a small group of individuals, mostly ex-security force officials and bureaucrats, and they too were primarily concerned with traditional security issues (focusing on the military and state rather than the people). It was after almost two decades later Nepal introduces the concept of Human Security and engages in it⁸

If Nepal had a well-defined national security policy to address internal and external security challenges, the movements and conflicts may have caused less death and damage. Even after the 2006 Federal Democratic Republic, successive governments and political parties have neglected to draft a national security policy. Because of the lack of a comprehensive written

⁷Bishnu Upreti, "Environmental Stress and Demographic Change in Nepal: Underlying Conditions Contributing to a Decade Human Security View Project Making Women Count for Peace: Gender, Empowerment and Conflict in South Asia View Project SPECIAL REPORT • ENVIRONMENTAL STRESS and DEMOGRAPHIC CHANGE in NEPAL," n.d., accessed June 26, 2023.

⁸ Bishnu Raj Upreti et al., *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute For Policy Studies And South Asia Regional Coordination Office Of Nccr (North -South, 2013). Pp 1

national security policy, successive governments have misused the security agencies for their own political objectives, convenience, and regime protection and power retention.

The concerns raised by the Constituent Assembly (CA) members have been brought to the attention of the CA and Legislature-Parliament, with a strong emphasis on the need to formulate a new national security policy that can effectively tackle both internal and external security challenges. The CA members, in particular, have thoroughly discussed national security policy in the National Interest Preservation Committee and the Committee on State Restructuring and Distribution of State Power. They have also recommended that the government draft a national security policy after consulting with concerned stakeholders. The National Interest Preservation Committee had released its preliminary report on national security policy, which is aligned with the concept of Human Security. The report was submitted to the CA. In 2008, the National Interest Preservation Committee received a report on national security from the Nepal Army (NA). The NA has also proposed a redefinition of Nepal's national security policy to align with the concept of Human Security.⁹

The year 2015 was challenging and pivotal for Nepal. It was challenging because the country was hit by a number of earthquakes in April and May, which disrupted the economic, cultural and social foundation of the Himalayan nation. It was pivotal as just few weeks later the earthquake the major political groups finally came to an agreement for adopting the constitution which the country had been waiting for many years.¹⁰ The historic 2015 constitution contemplates a dramatic restructuring of statecraft and nationhood. It establishes hundreds of individuals' fundamental rights and divides a unitary state into seven provinces for increased political and economic inclusion.¹¹

Human Security in Nepal

Providing Security is crucial for maintaining a peaceful society and promoting social and economic progress. It is especially crucial in fragile communities like Nepal, which are subject to or have experienced conflict. The insecurity among the people in the post-

⁹Geja Sharma Wagle, "Political Insecurity and Armed Conflict: A Threat to Human Security," in *Human Security in Nepal: Concepts, Issues and Challenges* Edited by Bishnu Raj Upreti Rajan Bhattarai Geja Sharma Wagle Published by Nepal Institute for Policy Studies And (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu, 2013).

¹⁰ Matteo Miele, "NEPAL 2015-2017: A POST-EARTHQUAKE CONSTITUTION and the POLITICAL STRUGGLE," *The Journal of the Italian Think Tank on Asia Founded by Giorgio Borsa in 1989* XXVIII (2017), https://www.asiamaior.org/files/Nepal-Miele_AM-2017.pdf.

¹¹GOVERNMENT OF NEPAL NATIONAL PLANNING COMMISSION KATHMANDU, "Nepal's Sustainable Development Goals Status and Roadmap: 2016-2030," 2017.

settlement country is notable. There are many different causes of insecurity in Nepal, as security can signify different things to different individuals.¹²

The Human Security challenges faced by Nepal are consistently characterised by the exacerbation of 'ethnic and religious conflicts, abuse of authority, the prevalence of diseases, food insecurity, environmental degradation, increasing crime rates, and various other forms of anti-social behaviour'. Malnutrition, poverty, disease, natural disasters, and armed conflict kill more people every day in Nepal than any other cause. Human Security concerns are growing more prevalent, posing larger challenges to Nepal's social stability and order.¹³

The concept of Human Security evolved after the fall of the Soviet Union and the subsequent dissolution of tension between the world's superpowers during the Cold War. In light of the diminished likelihood of large-scale interstate conflicts in the global stage, an opportunity emerged to explore alternative paradigms of security that transcend traditional notions. This shift in focus entails a reorientation towards the primacy of the individual over the state in matters of security. In light of the Human Development Report published by the United Nations Development Programme (UNDP), 1994 numerous governments and non-governmental organisations (NGOs) across the globe have increasingly directed their focus towards the concept of Human Security. However, the idea of Human Security has been notably absent from the policies and practises of the development sector in Nepal and South Asia in general. Rather than actively exploring the concepts of Human Security, policy and politics in South Asia have predominantly maintained a perspective that regards security as primarily centred on the state and its military aspects.¹⁴

While talking about Human Security it is important to look into the concept of border security as well as border security has been an integral part of security since human civilisation, but the concept of border got academic attention only during the late 1990s. Nepal borders with both India and China, the Indo-Nepal border is a porous, open border with both good and bad implications. Cross-border crime has flourished in Nepal's southern border region due to poverty and illiteracy. The number of crimes in the Terai has also been

¹²Narad N Bharadwaj et al., *Nepal at a Crossroads: The Nexus between Human Security and Renewed Conflict in Rural Nepal*, 1st ed. (Kathmandu, Nepal: Friends for Peace and International Alert, 2007).

¹³Naresh Bhakta Adhikari, "An Analysis of Major Environmental Threats to Human Security in Nepal," *Contemporary Research: An Interdisciplinary Academic Journal* 4, no. 1 (2020). Pp 130

¹⁴Sally Carlton, "Human Security in Nepal. Where to Now?," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu, 2013). Pp 281

increased due to the unemployment of the youth. Crime, bilateral disputes and natural catastrophes with its bordering countries have all caused problems for Nepal's border.

In terms of human development, Nepal lags behind. As measured by the Human Development Index (HDI), Nepal is positioned at the bottom of nations with a medium HDI, which reflects the country's human security situation. As a result, Human Development and Human Security are intertwined concerns, as the latter is associated with threats to well-being and the former is an upwardly-focused concept for the same. Human development seeks to broaden people's access to opportunities so that progress is equitable for all, whereas Human Security deliberately focuses on downside risks and takes into consideration a variety of factors that inhibit human development. Since freedom from want and freedom from fear, the two components of Human Security (UNDP, 1994), are inseparable phenomena, the promotion of human development and security requires an integrated approach that integrates both of these factors in order to create an environment conducive to living in dignity and decency.¹⁵

The Human Security Index (HSI) integrates economic, educational, social welfare, and environmental indicators, reflecting the still prevalent 'triple bottom line' approach. It seeks to assess a person's security in a more culture-neutral manner than the HDI does by striking a balance along the dimensions of global-local, individual-society, regional biases, varied metrics and definitions of Human Security, and the diversity of human communities. It can be used to evaluate the performance of local governments.¹⁶

Human Development also raises the question of development's sustainability. Each generation must meet today's need without incurring debts it cannot repay: financial debts by over borrowing, demographic debts by allowing unchecked population and environmental debts by exhausting natural resources. It can also be a unifying concern for both the developing and the industrial countries. The Report also introduced a Human Development Index (HDI) a more realistic statistical measure of Human Development. The HDI merged income with life expectancy and literacy to give overall figure and ranking.¹⁷

¹⁵ Yuba Raj Khatriwada, "Poverty: A Threat to Human Security," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu, 2013). Pp 34

¹⁶ Alexander Lautensach and Sabina Lautensach, *Human Security in World Affairs: Problems and Opportunities*, n.d. pp 36

¹⁷ UNDP report 1991

Almost every country in the world is currently facing some form of threat as a result of migratory movements, environmental degradation, terrorist group attacks, cyber terrorism the spread of contagious diseases, radical, ethnic, or religious conflicts, abject poverty, inequality, and so on. These challenges are distinct from those posed by interstate rivalries and battles in the past. Nepal is also influenced by poverty, insurgency, education, unemployment, and health challenges, along with the abovementioned challenges.

Nepal faces numerous security threats, including demands for identity politics from ethnic and regional groups, corruption, extremism, a narcotics transit hub, growing culture of violence, crime, and disregard for law and order, politicisation of government institutions, human trafficking, and criminalization of politics. Aside from these obstacles, piracy, information security issues, environmental security issues, and various types of calamities such as floods, earthquakes, and landslides are all becoming increasingly serious.¹⁸

Millennium Development Goals

The MDGs can be looked as a guiding map for a country to achieve its Human Security. The trickle-down approach to development which was the policy of the Breton Woods institution of the 1970s and 1980s failed to transform the economies as well as the social conditions in the south. These policies rather increased disparity in income between and within the states. Therefore, the Human Development approach was introduced to address this challenge. Eventually Human Security emerged in the human development paradigm and to respect human rights and fundamental freedoms was the essence of Human Security. This was the building block for the UN Millennium Declaration of 2006 which laid down the foundation of the Millennium Development Goals (MDGs). The goals in the MDGs were to be achieved by 2015. Nepal also became a part of this declaration it integrated the goals in its national planning process.¹⁹

Nepal has made commendable progress in reducing hunger and poverty. Extreme poverty fell from 33.5 percent of the population in 1990 to 16.4 percent in 2013, meeting the goal of half the poverty rate by 2015. Between 2000 and 2015, the rate of decline was faster than in the prior period. Between 2005 and 2013, the incidence of poverty decreased by one percentage point each year, according to the Nepal Living Standards Surveys (NLSSs). The decrease in

¹⁸ "Security Challenges in Nepal, | Nepal Center for Security Governance," *Nepalsec.gov.org*, 2016, <http://nepalsec.gov.org/security-challenges-in-nepal/>.

¹⁹ Idid 38

the poverty gap ratio indicates that average people were closer to reaching above the poverty level in 2015 than in 2008.²⁰

The reduction in the poverty level during the MDGs goal was great but 15.1% of Nepal population still live in poverty according to the economic survey 2022/23, and the majority of them lives in the rural areas.

Nepal was on the threshold of attaining primary education for all. In primary education, the survival rate climbed from 63 percent in 2000 to 89.4 percent in 2015, and the net enrolment ratio (NER) improved from 81 percent in 2000 to 96.6 percent in 2015. Retaining students in elementary and secondary education and pushing for 100% enrolment of NER through the enrolment of children from low-income and rural households are the two main unfulfilled agenda. Additionally, interventions are required to raise the standard of learning in public schools.²¹

In terms of women's empowerment and gender equality, significant progress has been accomplished. With gender parity index (GPI) values of 1.0 in secondary education and 1.09 in elementary education in 2015, gender parity has been attained in both primary and secondary education. In terms of finishing elementary and secondary school and staying in Grades 5 and 8, girls now outperform boys. The primary unfulfilled goals are to enhance the quality of education, reduce inequalities in educational outcomes, and increase the number of women enrolled in technical and vocational education and training.

Nepal met all of the objectives for MDG 4, which included raising vaccination rates, decreasing infant mortality rates (IMR), and lowering the under-five mortality rate (U5MR). The measles vaccination rate climbed from 71 percent in 2000 to 92.6 percent in 2015, although the IMR and U5MR decreased from 64 and 91 per 1000 live births in 2000 to 33 and 38, respectively, in 2015. The primary unfulfilled goals are to reduce infant mortality

²⁰ Nepal and the Millennium Development Goals Final Status Report 2000–2015

²¹ Kathmandu Singhdurbar, "National Review of Sustainable Development Goals Government of Nepal National Planning Commission," 2017, <https://sustainabledevelopment.un.org/content/documents/16513Nepal.pdf>.

to 10/1,000 live births and U5MR 22/1,000 live births by addressing the differences in mortality rates among regions, social groupings, and income quintiles.²²

Nepal nearly met the MDG but did not quite meet the targets for lowering maternal mortality in MDG 5. While the percentage of deliveries supported by a safe birth assistant climbed from 11% in 2000 to 55.6% in 2015, the maternal mortality ratio (MMR) decreased from 850/100,000 in 1990 to an estimated 258 in 2015. The primary unfinished business is lowering the MMR in all areas, demographic groups, and income quintiles in order to meet the SDG objective of 70/100,000 live births.

In the fight against malaria, HIV/AIDS, and tuberculosis (TB), Nepal has achieved significant improvements. The prevalence rates of malaria, TB, and HIV have stopped increasing and are starting to decline. The remaining agenda items include raising public funding for the fight against these illnesses, expanding access to HIV treatment and care, eradicating malaria, taking on multi-drug-resistant tuberculosis and enhancing government ownership of the tuberculosis control programme.

It has been a laudable effort that Nepal has attained some of the 7 targets of the MDGs, while some remained partially achieved. About Environment sustainability which is mentioned in the target 7, Nepal contributes relatively little to global warming as its CO₂ emission in the year 2015 was just 0.1 tonnes per capita and its CO₂ equivalent emissions are growing at a slower pace than those of emerging nations. The consumption of compounds that deplete the ozone layer has significantly decreased as a result of the government's ban on them. The commercial use of energy per unit of GDP decreased from 3.91 ToE/mRs in 2000 to 3.2 ToE/mRs in 2015, despite an increase in energy consumption from 7,759 tonnes of oil equivalent (ToE) in 2000 to 11,232 ToE in 2013–14.²³

All aspects of this MDG no. 8 were not met. Insufficient official development aid (ODA) was given to Nepal. During the MDG era, the per capita amount of foreign assistance received was \$32. The majority of the MDG goals were thus accomplished through government

²²ibid

²³ "Nepal and the Millennium Development Goals Final Status Report 2000-2015 Government of Nepal National Planning Commission" (Kathmandu Nepal: Government of Nepal, 2016), [https://www.npc.gov.np/images/category/MDG-Status-Report-2016 .pdf](https://www.npc.gov.np/images/category/MDG-Status-Report-2016.pdf).

funding. Enhancing Nepali goods and services' access to the global market and increasing ODA disbursement are the primary unfulfilled partnership agenda²⁴

Sustainable Development Goals

With the political struggle for people's democracy ended, the challenge today is to realise Nepalis' hopes for development and prosperity. In this environment, the country aspires to inclusive and rapid economic growth while promoting social justice and empowering residents both economically and socially. While the country's development plans and activities are directed towards this goal, the country's commitment to execute the 2030 Sustainable Development Agenda and attain the Sustainable Development Goals (SDGs) in 15 years has reinforced the country's push to prosperity. The activities at the government and political levels to build long-term visions and strategies for growth reflect the country's focus in this area.²⁵

Nepal will have graduated from the United Nations' list of Least Developed Countries (LDC) well before 2030. It has met 2 criteria (human assets and economic viability) out of 3 for graduation but is likely to slip off in threshold per capita income criteria. Nepal achieved nearly all of the Millennium Development Goals that were set for attainment between 2000 and 2015. However, the record varies by social group, gender, and geographical place. Building on this, Nepal will have worked hard to achieve the majority, if not all, of the Sustainable Development Goals (SDGs) by 2030. It will have played a significant role in directing the regional economy towards increased reliance on sustainable energy sources while tackling climate change.²⁶

Therefore, with the aim to understand the environmental challenges and link it with Human Security three districts of Nepal was chosen for the study. The selection of the districts was taken from three geographical region of Nepal. Ilam being the district of the hilly region, Taplejung the Himalayan district and Jhapa the Terai district.

²⁴ *ibid*

²⁵ National Planning Commission, Government of Nepal, "Nepal's Sustainable Development Goals Baseline Report," 2017.

²⁶ *ibid*

The map below shows the districts selected for research:



Source of Map: https://commons.wikimedia.org/wiki/File:Koshi_Province,_Nepal.png

Selection of the District:

Ilam District

Ilam, a district is the hilly region with an area of 1703kmsq, until 1813 CE/1869 BS it was the independent kingdom of the Limbu's. It is well-known for producing vast quantities of

cardamom, tea, milk, potato, ginger, broom and Orlan. Ilam Tea is exported throughout Europe.²⁷

The development of the Ilam district started much earlier because of the historical link that it had with Darjeeling. Ilam had a great influence from Darjeeling. British attempts to foster tea gardens in Darjeeling go back centuries at least 200 years and in Ilam, a tea plantation was founded approximately a century ago by the introduction of materials and techniques from Darjeeling. Geographical closeness to Darjeeling and Sikkim has had a significant impact on the quality of education in Ilam and other nearby regions. Even in India, missionary involvement in the Darjeeling region's educational system is praised, and Ilam also got benefited from it. The Ilamese people have close family ties in Darjeeling. People crossed the border frequently and unrestrictedly, which exposed them to different lifestyles, education, and most importantly development opportunities. Additionally, this has aided in the expansion of schools over time in Ilam. It is also at the forefront of the hilly district due to its road connectivity.²⁸

Taplejung District

Taplejung is situated in a remote area of Eastern Nepal in the Himalayas, with Tibet to the north. It is Nepal's third largest district in terms of land, covering an area of 3646 square kilometres. The district is bordered to the north by Tibet, to the west by Sankhuwasabha District, to the south by Tehrathum District and Panchthar District, and to the east by Sikkim, India.

For the majority of the people there, tourism, agriculture, and animal husbandry provide the main sources of income. Every month (apart from June and July), there is a huge number of local tourists who visit Taplejung to worship the famous deity Pathivara Devi. Meanwhile, visitors from around the globe come to hike and trek. One can enjoy a variety of cultures and sceneries throughout the district because of the natural richness of the country. This area has

²⁷ "Ilam: All You Need to Know - What the Nepal," May 22, 2023, <https://whatthenepal.com/2023/05/22/illam-all-you-need-to-know/>.

²⁸ S. Sharma, "Agricultural Transformation Processes in the Mountains of Nepal: Empirical Evidence from Ilam District," *Lib.icimod.org*, 1997, <https://doi.org/10.53055/ICIMOD.250>.

long been home to people from a variety of ethnic backgrounds, including Tamang, Rai, Gurung, Magar, Bramhan, Newar, Chhetri, and Sherpa.²⁹

Jhapa District

Named after a Rajbanshi word 'Jhapa' that means 'to cover', Jhapa is a district of Province No. 1 in eastern Nepal. The district has a total population of 994,090 according to the most recent data, the Nepal Census of 2021. The district covers 1,606 square km in total size.³⁰

Birtamod Municipality, one of Jhapa's principal commercial centres, has created a five-year periodic plan. Following the election of a new people's representative in the local level, the municipality has developed plans for long-term development. The municipality has prepared an action plan that centres on the theme of “Prosperity of Birtamod with development and good governance: Growth of business, industry, education, health, agriculture, and employment.” In order to stimulate the private sector, the municipality has developed plans to support the opening of medical colleges and hospitals offering services related to cancer, kidney, eye, spinal cord injury, brain, and gastroenterology; to regularly provide door-to-door health screenings and treatment for elderly and disabled residents; and to run an ambulance service with specialised doctors for them.³¹

Environmental Security in Nepal

Environment Security is a contested concept and has multiple meanings. This results from a combination of the equally potent and ambiguous concepts Environment and Security, and the numerous disciplines and schools of thought that analyse these two notions.³² Environmental problems such as degradation, pollution, or loss that cannot be reversed pose a significant risk to nations and their populations.³³

²⁹ “All about Taplejung,” english.ratopati.com, accessed March 1, 2024, <https://english.ratopati.com/story/25684>.

³⁰ “About: Jhapa District,” dbpedia.org, accessed March 1, 2024, https://dbpedia.org/page/Jhapa_District.

³¹ Republica, “Birtamod Municipality Unveils a Five-Year Periodic Plan to Make It One of the Prosperous Areas in Eastern Nepal,” MyRepublic accessed https://myrepublica.nagariknetwork.com/news/birtamod-municipality-unveils-a-five-year-periodic-plan-to-make-one-of-the-prosperous-areas-in-eastern-nepal/#/google_vignette.

³² Jon Barnett, Richard A Matthew, and Karen L. O’Brien, “Global Environmental Change and Human Security: An Introduction,” in *Global Environmental Change and Human Security* (United States of America.: Massachusetts Institute of Technology, 2010). Pp 5

³³ Colonel P K GAUTAM, *ENVIRONMENTAL SECURITY INTERNAL and EXTERNAL DIMENSION and RESPONSE* (2003; INDIA: KNOWLEDGE WORLD, 2003).

Environmental security is a major policy concern in developing countries such as Nepal, where most people rely on natural environmental resources such as forests for a living. For example, in Nepal approximately two-thirds of families use firewood for cooking and heating, and the average household spends about 50 person-days per year collecting firewood. Given the amount of reliance on natural resources, perverting natural resources such as deforestation is to be expected. Given the amount of reliance on natural resources, it is reasonable to predict that exploitation of natural resources, such as deforestation, makes rural households environmentally and economically vulnerable to sustaining their livelihoods. The problem is likely exacerbated further by the lack of alternative economic opportunities at the local level.³⁴

The connections between the environment and Human Security are certainly close and complicated. A significant amount of Human Security is dependent on people's access to natural resources as well as their susceptibilities to changes in their surrounding environment; conversely, a significant amount of environmental change is directly and indirectly influenced by human activities and conflicts³⁵

The Nepalese government is currently endeavouring to address the challenges posed by environmental issues, particularly climate change, through the implementation of conventional security measures. Climate Change became a significant concern for Nepal beginning in 1992. By 2030, models of global circulation predict that the average temperature in Nepal will rise between 0.5degreeCelsius to 2degreeCelsius. This will have extensive repercussions for Nepal, including negative effects on water availability, agricultural production, and forestry, among others.³⁶

The question of human impacts on global climate change was largely framed within a broader debate about sustainability in the first decade of the 21st century. The problem of addressing this and other global challenges (such as biodiversity loss and pollution), while also addressing global inequality and poverty and preventing the world economy from collapsing, is labelled to as sustainable development. In the wake of two global conferences, the 'United

³⁴Sundar S. Shrestha and Prem Bhandari, "Environmental Security and Labor Migration in Nepal," *Population and Environment* 29, no. 1 (November 7, 2007): 25–38, <https://doi.org/10.1007/s11111-007-0059-0>. pp 25-26

³⁵SanjeevKhagram, William Clark, and Dana FirasRaad, "From the Environment and Human Security to Sustainable Security and Development," *Journal of Human Development* 4, no. 2 (July 2003): pp289

³⁶Naresh Bhakta Adhikari, "An Analysis of Major Environmental Threats to Human Security in Nepal," *Contemporary Research: An Interdisciplinary Academic Journal* 4, no. 1 (2020). Pp130

Nations Conference on Environment and Development (UNCED)' in Rio de Janeiro in 1992 (the Rio Conference or the 'Earth Summit') and the World Summit on Sustainable Development in Johannesburg in 2002, these concepts have become pillars of any discussion regarding the environment and development.³⁷

Global Environmental Change

The Industrial Revolution is typically cited as the start of the Anthropocene, construction of towns, farms, highways, and various industrial and agricultural systems in place of forests, grasslands, and numerous other ecosystems. Rivers have been dammed, valleys have been inundated, water has been channelled, and entirely new artificial hydrologies have been built using pipes and pumps. The steam engine, which was fueled by coal combustion, set everything in motion, resulting in the carbon dioxide level to grow in the atmosphere. A second phase of the Anthropocene, with more dramatic modifications, has been set in motion by petroleum-powered industrial activity, and this is what is causing the current climate change catastrophe.³⁸

*Quoting a 64 years old respondent who was not at all happy with the construction of hydropower plants “hydropower projects are damaging a lot to the river. The river has its own way and flows in certain way and this construction project the natural beauty of the river is lost.”*³⁹

*Quoting a 55 years old respondent who was also unhappy about the hydropower construction “If we destroy nature this way, if we are taking benefit now there can be much more destruction later”.*⁴⁰

The ‘Anthropocene’ concept was introduced by Paul Jozef Crutzen as “a new geologic epoch in which humankind has emerged as a globally significant and potentially intelligent force capable of reshaping the face of the planet”

³⁷ Wm Mansfield Adams, *Green Development : Environment and Sustainability in the Third World* (London: Routledge, 2009). Pp 3

³⁸ Simon Dalby, “Human Security in the Anthropocene the Implications of Earth System Analysis ,” in *A Changing Environment for Human Security Transformative Approaches to Research, Policy and Action* (2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN Simultaneously published in the USA and Canada by Routledge 711 Third Avenue, New York, NY 10017: Routledge, 2013). Pp 67

³⁹ Interview of the retired government official 18th sept 2023

⁴⁰ Interview of the local people 17th sept 2023

The three stages of Global Environmental Change can be distinguished as:

1. Since the 1970s and 1980s, there has been the emergence of a new multidisciplinary scientific field of study that has concentrated on climate change, desertification, water, and biodiversity. Since the 1990s, global change scientific networks, programmes (IGBP, IHDP, Diversitas, WCRP), and projects, as well as policy-focused scientific "epistemic communities" such as the IPCC have evolved to assess and interpret scientific research findings and explain them to the global policy community and a global attentive public via the media.
2. Since the Earth Summit in Rio de Janeiro in 1992, the development of a new major policy field of international (environment) policy has resulted in new forms of international governance (climate change, biodiversity, desertification, and water regimes) that have moved to the centre of political concerns (politicisation) through major global governmental conferences in the framework of the annual conference of parties (COPs) of UNFCCC, Convention on Biological Diversity, UNCCD, and the triennial World Water Flora.
3. Since the early twenty-first century, this process of politicisation has been supplemented by a process of declaring specific global challenges (particularly climate change) as political issues of 'utmost importance' that 'require extraordinary means' and by addressing these global dangers and concerns as key security issues (securitization).⁴¹

Climate Change

Climate Change is defined as a change in the state of the climate that is identifiable (e.g., through statistical tests) by changes in the mean and/or variability of its attributes and that lasts for a significant amount of time, usually decades or longer. The phenomenon of climate change can be attributed to a variety of factors, including both natural internal processes and external forcing mechanisms, such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic alterations in the composition of the atmosphere or land use patterns.⁴² United Nations Framework Convention on Climate Change (UNFCCC) defines

⁴¹ Hans Günter Brauch, *Coping with Global Environmental Change, Disasters and Security*, ed. Hans Günter Brauch et al., *Hexagon Series on Human and Environmental Security and Peace* (Berlin, Heidelberg: Springer Berlin Heidelberg, 2011), <https://doi.org/10.1007/978-3-642-17776-7>. pp 85-86

⁴² Regan Sapkota and Kedar Rijal, "Climate Change and Its Impacts on Nepal," 2016. PP 3

climate change as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”⁴³

An increasingly pressing important global concern of our day, climate change, which results from global warming caused by greenhouse gas (GHG) emissions, affects people and the earth both now and in the future, in every country in the world. At the 21st COP21 (Conference of Parties) to the UNFCCC (the United Nations Framework Convention on Climate Change), the Paris Agreement set ambitious long-term objectives to: • Keep global temperature rise at or below 2 °C; • Continue efforts to reduce it to below 1.5°C; • Achieve the peak of global greenhouse gas (GHG) emissions and start to reduce them as soon as possible; and • Achieve a neutral balance between greenhouse gases (GHGs) and removals by the end of the second half of the century. It is only Bhutan and Suriname carbon negative countries.

Despite contributing very little to global GHG emissions 0.06% in 2011, compared to 0.025% in 1994. Nepal is one of the top 10 most exposed countries to risks and disasters related to climate change. With an increase of 2.5 times from 24 million metric tonnes in 2000 to 60 million metric tonnes in 2019, at an average annual growth rate of 4.8%, The GHG emissions in Nepal are increasing in both the energy and non-energy sectors. As Nepal is moving forward to graduate from being classified as a least developed country to a middle-income country by 2030. It is anticipated that the nation's economic development will pick up speed and that it will consume more fossil fuels if the current pattern of energy consumption holds true over time, as seen in other developed nations.⁴⁴

Since Climate Change and Human Security are becoming increasingly intertwined, a new wave of international initiatives should urgently address them to tackle these issues in a way that is effective, efficient, and transparent. It is widely acknowledged within the scientific community that there exists a consensus regarding the phenomenon of global warming, which can primarily be attributed to human activities and/or the amplified release of Greenhouse gases. As a result, fundamental essentials including food, water, air, and energy

⁴³Nepal's Long-term Strategy for Net-zero Emissions Govt of Nepal 2021

⁴⁴ Shree Raj Shakya et al., “Environmental, Energy Security, and Energy Equity (3E) Benefits of Net-Zero Emission Strategy in a Developing Country: A Case Study of Nepal,” *Energy Reports* 9 (December 2023): 2359–71, <https://doi.org/10.1016/j.egyr.2023.01.055>.

are under more stress. Sustainability is being tested, and the burden on Human Security is increasing. Therefore, it makes sense to improve our understanding of climate change.⁴⁵

The United Nations Framework Convention on Climate Change (UNFCCC) was signed by Nepal on June 12, 1992; it was ratified on May 2, 1994, and came into force on July 31, 1994. The Ministry of Population and Environment (MOPE) of Nepal is the country's focal point for the United Nations Framework Convention on Climate Change (UNFCCC) and to coordinate climate-related actions.⁴⁶

Climate science shows that global warming is accelerating and will have far-reaching consequences. There are links between climate change consequences and human security, but their scope and implications are little understood. There are a number of arguments that demonstrate how climate change may jeopardise human security. Societies' susceptibility to climate change depends on how much of their population is dependent on ecosystem services and natural resources, how much these resources and services are impacted by or sensitive to climate change, and how well they are able to adapt to changes in these resources and services to ensure their continued supply. However, climate change concerns account for only a minor portion of what comprises human security. Climate change may hasten resource conflict both within and outside of political boundaries, as well as increasing poverty and even violence, all of which pose hazards to human well-being. The repercussions of climate change transcend national boundaries, and humans must grasp nature's tolerance for it.⁴⁷

'Nepal was ranked as the 4th most vulnerable country due to the impacts of climate change'(Maplecroft, 2010). Although it is one of the least contributors to the emissions of greenhouse gases (GHGs), it only emits 0.027% of the global share of greenhouse gases (INDC of Nepal, 2016). Nepal's total carbon dioxide (CO₂) emissions in 2019 was 23 million metric tons of carbon dioxide(mMtCO₂) in the reference scenario. In 2019, non-energy-related emissions accounted for 46% of net CO₂ emissions, while the energy sector was responsible for 54%. In the scenario of reference, non-energy emissions would decrease to 32% of total emissions by 2050. 'Land Use, Land Use Change, and Forestry (LULUCF)'

⁴⁵ Nanda P Ved, "Nuclear Weapons, Human Security, and International Law," *Denver Journal of International Law and Policy* 37, no. 3 (2009). Pp 187

⁴⁶ Yogesh Nair, "Environment as a National Security Concern :A Perspective," *Journal of the United Service Institution of India* CXLI, no. 589 (July 2012). Pp 2 pp 6

⁴⁷ Batu Krishna Uprety, "Climate Change: A Challenge to Human Security," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu, 2013). Pp191

CO₂ emissions are projected to increase to 17 mMtCO₂ by 2050, from an estimated 8 mMtCO₂ in 2019. This figure is expected to rise to 34 mMtCO₂ in 2030 and 79 mMtCO₂ in 2050. The economy of Nepal exhibits a significant reliance on climate-sensitive sectors, namely agriculture, water, energy, and tourism, which exert a substantial influence on the nation's gross domestic product (GDP). With the ongoing effects of climate change, the national GDP is projected to decline in the future. Nepal's economy is experiencing inconsistent GDP growth, ranging between 1% and 8% per year. Currently, agriculture contributes significantly to national GDP (27% of total contribution). Nepal has achieved great progress in the last three years, with a GDP growth rate of 7.3% from 2017 to 2019. However, due to the ongoing COVID-19 pandemic, which is having a significant impact on the national economy, GDP growth has slowed significantly in 2020 and 2021.⁴⁸

Extreme weather events and climate change have noticeable effects. Over the past few decades, glaciers have been melting more quickly. Between 1979 and 1989, the majority of the glaciers in the Khumbu Region retreated by 30 to 60 metres, while the glacier surface shrank by about 12 metres. 330 glacier lakes, out of the 2323 that were recorded, have grown to areas larger than 0.02 km square and are continually growing. In Nepal, glacier retreat can exceed 20m per year, resulting in a six-fold increase in glacial lakes. The outbursts of the lake have the potential to cause "vertical tsunamis" that would have an impact on both the upstream and downstream populations, their way of life, and ecosystems.⁴⁹

If global warming continues to rise at the current rate, the Intergovernmental Panel on Climate Change (IPCC) predicts that it will most likely hit 1.5° C between 2030 and 2052 (high confidence). With such warming, climate-related threats to health, livelihoods, food security, water supply, human security, and economic growth are expected to rise. Furthermore, the United States announced in June 2017 that it would withdraw from the December 2015 Paris Agreement on Climate Change Mitigation, the core goal of which is to pursue efforts to limit global temperature rise to 1.5° C. Given the substantial and convincing evidence of climate change, certain governments' lack of proactive efforts to address the issue is troubling.⁵⁰

⁴⁸Nepal's Long-term Strategy for Net-zero Emissions Govt of Nepal 2021

⁴⁹Batu Krishna Uprety, "Climate Change: A Challenge to Human Security," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu, 2013). Pp 196

⁵⁰ *ibid*

In the sixth Global Environmental Outlook report, UN Environment (2019) draws several conclusions about current and projected climate change impacts: “Climate change has become an independent driver of environmental change and poses a serious challenge to future economic development (well established) Climate change pose risks to human societies through impacts on food, and water security (established but incomplete), and on human security, health, livelihoods and infrastructure. These risks are greatest for people dependent on natural resource sectors, such as coastal, agricultural, pastoral and forest communities; and those experiencing multiple forms of inequality, marginalization and poverty are most exposed to the impacts... Climate change will amplify existing risks and create new risks for natural and human systems”⁵¹

In order to assist communities who are particularly vulnerable to the effects of climate change, the Government of Nepal has been aggressively promoting climate change activities in general and adaptation measures in particular. In order to create medium- and long-term adaptation alternatives for the nation, the Government of Nepal recently started the National Adaptation Plan (NAP) creation process.

The Central African Republic, Chad, South Sudan, Somalia, Yemen, the Democratic Republic of Congo, the 2016 Human Development Report by the United Nations Development Programme puts forward that the country which is mostly affected by violence, instability and fragility are furthest from achieving the Sustainable Development Goal. The 17 commitments which is put forward in the sustainable development goal made by the international community in 2015 to be achieved by 2030. The fragile state is the most in need of development progress and for them achieving the SDG 16 which mentions peace and justice for a strong institution is the first steps to work towards meeting their developmental goal. Climate Change is the hindrance for such fragile state to achieve this goal.⁵²

Nepal has sustained peace, formed a new constitution, held successful elections, and overall is on a trajectory towards stability and an increase in living standards since the end of the civil war in 2006. On the Fragile States Index, Nepal was ranked third most improved country in 2018 and fourth in 2019, yet it continues to be a country of "High Warning" and faces a number of difficulties that could ultimately undermine this improvement in the long

⁵¹ James Orbinski et al., “CLIMATE CHANGE, PUBLIC HEALTH, and the CONFLICT CYCLE,” in *ROUTLEDGE HANDBOOK of ENVIRONMENTAL SECURITY*, 2022. Pp251

⁵² Alec Crawford and Clare V. Church, “CLIMATE CHANGE as a CONTRIBUTOR to CONFLICT,” in *ROUTLEDGE HANDBOOK of ENVIRONMENTAL SECURITY The* (New York: Routledge, 2022). Pp145

run. The weak governance that impedes Nepal's development is seen in its limited ability to offer public services to all residents, resilience to withstand upcoming environmental shocks, and persistent inequality.⁵³

The economy of Nepal is heavily reliant on climate-sensitive industries, such as rain-fed agriculture, and the country is prone to flooding due to its delicate ecology and spectacular geography.⁵⁴ Communities all throughout the world are already noticing some of the most severe expected effects of climate change. Climate change poses serious concerns to human security globally, and to fragile states in particular. These threats include an increase in the frequency of extreme weather events, increases in global temperature, changes in precipitation rates, and an increase in average sea level.

Climate change and temperature increases are occurring at an unprecedented pace of rate as a result of greenhouse gas emissions, which are at their highest levels ever. Land and ocean surface temperatures increased by 0.85°C between 1880 and 2012, and the thirty years from 1983 to 2012 were probably the warmest in the previous 1,400 years (IPCC, 2013). Forecasts predict that global temperatures will most likely continue to rise by at least 2.0°C by the end of the century given present atmospheric greenhouse gas concentrations and current trends in emissions (IPCC, 2014, 2018). By 2100, temperatures would rise by 3–4°C if GHG emissions are not reduced by 45% below 2010 levels by 2030 (IPCC, 2018).⁵⁵

Climate change will also have a direct influence on human well-being through affecting water quality and quantity, food production, natural disaster frequency and magnitude, and energy security. Climate-related effects are already being felt. Climate-related calamities such as drought, landslides, and floods directly affect around one million people in Mid- and Far West Nepal each year. Between 1971 and 2010, climate-related disasters were responsible for 25% of deaths and a \$5.34 billion economic loss (approximately 76% of total economic losses in the country).⁵⁶

⁵³Jennifer Coulthard, KC McLean , and Sarah Mackintosh, “NEPAL: STATE FRAGILITY and POLICY ANALYSIS BRIEF” (NORMAN PATERSON SCHOOL OF INTERNATIONAL AFFAIRS, December 11, 2019). Pp1

⁵⁴ Christian Webersik and Manish Thapa, “Nepal Climate Change and Security Factsheet,” *United Nation University Institute of Advanced Studies*, 2008. Pp1

⁵⁵ Alec Crawford and Clare V. Church, “CLIMATE CHANGE as a CONTRIBUTOR to CONFLICT,” in *ROUTLEDGE HANDBOOK of ENVIRONMENTAL SECURITY The* (New York: Routledge, 2022). Pp147

⁵⁶Bishnu Raj Upreti and Evgenia Nizkorodov, “THE ENVIRONMENTAL SECURITY DEBATE IN NEPAL a PERSPECTIVE from the SOUTH,” in *ROUTLEDGE HANDBOOK of ENVIRONMENTAL SECURITY*, 2022. Pp 145

Climate Change can cause severe risk to downstream communities, early glacial melt can create Glacial Lake Outburst surges (GLOFs), which are tsunami-like surges of water caused by enormous chunks of glaciers breaking off and crashing into neighbouring lakes.²⁶ GLOFs have already occurred in Nepal within the past three decades, 11 of which have had transboundary effects. One of the worst GLOFs ever came in 1985, when the Langmoche valley was completely submerged within 30 to 90 minutes of the initial glacial lake burst. The GLOF damaged areas of woodland, arable land, buildings, and residences. Due to this, the community lost its primary source of income and is still in danger from landslides and more erosion.⁵⁷

Quoting a 55-year-old respondent *“with Nepal’s adoption of a new federal system there is three tier government: the central, the province and the local but the functions of this government has not been defined. What is the work of the province, the relation between the central and local government has not been defined. Due to this the Green City Ilam Plan was stopped. Climate change is one major issue in Nepal and government has come up with the plan of Climate Resilient Village this focus on the agriculture sector plus renewable energy. This is the adaptation plan. But in spite having proper policies and guidelines the main issue lies in the implementation. Everything is there in written but not been implemented”*⁵⁸

Quoting a 60-year respondent *“there has been less landslides in Ilam this year but the few years ago landslides were frequent in Ilam and many people have migrated from Ilam to different village nearby”*⁵⁹

Agriculture

Nepal is a country mostly dependent on agriculture. Subsistence agriculture is heavily dependent on forest resources. Despite the establishment of a number of conservation regulations by the government (Forest Act, 1993; Master Plan for the Forestry Sector, 1998), the forest is constantly under strain and in a condition of continual degradation as a result of an ever-increasing population. Any disruption to forest resources makes people environmentally susceptible and economically vulnerable in terms of sustaining their livelihood.⁶⁰

⁵⁷ ibid

⁵⁸ Interview with the government official 17th sept 2023

⁵⁹ Interview with the local people 17th sept 2023

⁶⁰ ibid 29

It is widely acknowledged that a significant proportion of environmental issues can be attributed to anthropogenic activities. The encroachment upon wildlife habitats resulting from agricultural expansion, infrastructure development, embankment and barrage construction, deforestation, and land degradation represents a significant array of challenges. The strain of a growing population often depletes natural resources to such an extent that it creates an imbalance for the region, leading to migration of people from one region and uneven population influx in other areas, raising security issues.⁶¹

Nepal is home to some of the world's most natural landscapes and diverse wildlife. A country with 35 different kinds of forests, 118 ecological systems, 75 different vegetation and the highest peak on Earth. There is growing danger to these resources. The survival of the Nepalese people, especially the rural impoverished is directly reliant on natural resources, and a substantial portion of the country's income is derived from climate-sensitive sectors that include forestry, agriculture, and ecotourism. Nepal is among the world's most disaster-prone nations, and all of the main hazards it faces from disasters aside from earthquakes are related to the climate. The annual expenses of climate-related disasters are close to 1.5% of GDP, and this number is projected to rise as adverse weather conditions become more common and severe.⁶²

Agriculture is the primary activity in Ilam. Eighty-nine percent of the people of Ilam works in agriculture, while the remaining eleven percent are employed in the government and private sector, industries and services.⁶³

Quoting a 35-year-old respondent “agriculture in Ilam is still good as compared to other districts, farmers earn quite well but this is not in case of entire Ilam, there are some sectors e.g. cardamom which was produced in vast quantity in Ilam but now the production of cardamom has decreased”⁶⁴

An increase in cardamom output has provided farmers of Taplejung with some relief. A major producer of cardamom in Nepal is Taplejung. It contributes between 30 and 40 percent

⁶¹Yogesh Nair, “Environment as a National Security Concern :A Perspective,” *Journal of the United Service Institution of India* CXLI, no. 589 (July 2012). Pp 2

⁶² “Environment and Global Climate Change | Nepal | U.S. Agency for International Development,” *Www.usaid.gov*, November 14, 2017, <https://www.usaid.gov/nepal/environment-and-global-climate-change>.

⁶³Udaya Sharma, “Development of Micro-Enterprises; Ilam and Bhojpur District, Nepal,” *Lib.icimod.org*, 1998, <https://doi.org/10.53055/ICIMOD.277>.

⁶⁴ Interview of the local people 17th sept 2023

of the nation's total cardamom production. The two main cardamom species cultivated in the Taplejung district are Ramsai and Golsai. Golsai may be grown in gardens between 1,000 and 1,500 metres above sea level, whilst Ramsai can be grown in gardens between 1,200 and 1,800 metres above sea level.

*Quoting a 40-year-old respondent a farmer “Though the production of cardamom has increased. There is no proper irrigation facility and the masaumkopariwartan (climate change) is the main cause of concern.”*⁶⁵

In most developing nations, gender inequality is still a factor in the declining agricultural sector. Since women are still essential to the growth of agriculture, it is important to acknowledge their contributions and promote their skills in order to raise agricultural output. Not only do women make up the majority of full-time farmers in Jhapa, but they also account for the majority of agricultural labourers. It is discovered that women perform more production jobs in agriculture than males do.⁶⁶

Agriculture is the most susceptible economic sector to both climate change and a rise in the frequency of extreme weather events. Direct climatic pressures on crop growth and development include those brought on by temperature and precipitation extremes as well as variations in crop growing seasons. The decrease in the fertility of the soil and soil moisture along with an increase in crop pest and disease incidence, are the factors that link the indirect impacts.⁶⁷

*Quoting a 45-year-old respondent “Climate Change is the main issue. The government is coming up with awareness programme in the villages but the farmers who are uneducated it is hard for them to understand what is climate change and its consequences in the long run so the government must come up with more awareness programme”*⁶⁸

⁶⁵ Interview of the farmer 19th sept 2023

⁶⁶ “CHAPTER-I,” accessed March 2, 2024, <https://elibrary.tucl.edu.np/bitstream/123456789/15238/2/chapter%20page.pdf>.

⁶⁷ Tara Kharel and Ashutosh Kumar Shukla, “Impact of Climate Change on Agricultural Production and Adaptation Practices in Eastern Terai: A Case Study of Gauradha, Jhapa, Nepal Impact of Climate Change on Agricultural Production and Adaptation Practices in Eastern Terai: A Case Study of Gauradha, Jhapa, Nepal,” *International Journal of Natural and Human Sciences* 1, no. 2 (2020): 31–50.

⁶⁸ Interview of local people 17th sept 2023

Deforestation

Deforestation is the most fundamental and continual form of human environmental modification. There is a definitive connection between global deforestation and environmental security. The carbon content of the environment is governed by trees and vegetation, which in turn regulates the greenhouse effect. The impacts of deforestation vary from the very subtle changes in climate that loss of forest areas may induce to the urgent life-threatening issues of depletion of arable land productivity and the resulting population displacement.⁶⁹

The term deforestation has been used to describe changes in many different ecosystems, although deforestation impacts a specific geographic area wherever it happens. As a result, it is a major source of concern in the affected areas; loss of forest cover can have a negative impact on the supply of wood fuels for home energy, soil and water resources, and the quality of rural life. Furthermore, significant deforestation can have global ramifications: Large-scale Forest area loss has been linked to changes in wood supply, hydrologic balance, genetic resources, and global carbon and element cycles.⁷⁰

The forest in Nepal is classified into three types: the government forest which is the restricted forest, the second is the community forest where they have their own laws, bylaws for conservation, protection and sustainable use. Lastly is the private forest in this type of forest they can cut and sell the woods after paying certain royalty. Around 44% of the area is under forest cover.

Corruption is a major contributor to Nepal's rapid environmental degradation. Transparency International (2019), a non-governmental organisation that evaluates countries from least to most corrupt, ranks Nepal 113th out of 180. While Nepal has a thorough legal anti-corruption framework in place, it is poorly regulated and enforced. This corruption has severe economic, social, and environmental implications. Illicit financial flows from Nepal, as well as corruption in the public and judicial sectors, have hindered poverty reduction efforts and caused disparities in access to resources like electricity and water (UNDP, 2014). Corruption

⁶⁹ Ibid pp 3

⁷⁰ Julia Allen C and Douglas F. Barnes, "The Causes of Deforestation in Developing Countries," *Annals of the Association of American Geographers* 75, no. 2 (June 1985). pp163

creates potential for resource overexploitation, pollution of air and waterways, biodiversity loss, and underprovision of important services critical to human well-being.⁷¹

Quoting a 45-year respondent “*One of the main emerging issues in transboundary is poaching and illegal trade. Illegal trade of Pangoling, and forest woods have increased*”⁷²

Nepal's forests are the country's second most valuable natural resource, after water. The forestry sector in Nepal is critical to the country's economic development and social life. According to the Food and Agriculture Organisation of the United Nations (FAO), Nepal's forestry sector contributed 3.5% of the country's GDP in 2000 and 4.4% from 1990 to 2000. Deforestation has a long history in Nepal. Intensive deforestation began during Nepal's unification period (before 1768), when forests were transformed into agricultural land to feed the vast number of militants in several states. Their army was their power, and military achievements were frequently rewarded with land grants, which often resulted in more deforestation. It was heightened further in 1846, when the Rana regime implemented a system of selling timber to foreign contractors. Nonetheless, the intensity and impacts of deforestation were only observed by early international visitors in the 1950s.⁷³

Nepal saw the highest rate of deforestation between 1947 and 1980, when its forest cover dropped at an annual rate of 2.7% (from 57% to 23% of the national area), and then at a 1.8% yearly pace between 1980 and 2000 (UNEP, 2001). Population growth (annual rate 1.40% in 2011 vs. 2.25% in 2001) appears to be the most important factor driving Nepal's declining forest cover. The number of people who rely on agriculture is growing, and as a result, agricultural land is expanding, primarily by encroaching on forest regions.⁷⁴

The vast Tarai forests were hardly disturbed until the late 1920s, when the government began expanding cultivated areas by clearing some forests and harvesting lumber from other forests for shipment to India in order to collect revenue. Due to migration, the low-lying Tarai region has undergone the most deforestation since the 1950s. Population pressure, insufficient land holding, a lack of food production, indebtedness, deteriorating environmental conditions, natural calamities, a lack of employment opportunities, and so on are the major push factors

⁷¹ ibid

⁷² Interview of the forest official 17th sept 2023

⁷³ Ram P. Chaudhary, YadavUprety, and Sagar Kumar Rimal, “Deforestation in Nepal: Causes, Consequences, and Responses,” in *Biological and Environmental Hazards Risks and Disasters* (Elsevier, 2016). Pp 338

⁷⁴ ibid

for migration from hills to Tarai, followed by government policies for resettlement in the Tarai. Between 1950 and 1986, 103,968 acres of forest were destroyed as part of the planned resettlement programme. During the same time period, migrants unlawfully occupied an equal area of the forest for settlement. Malaria eradication, easier access via road links, land availability, greater food availability, health facilities, good education, and work opportunities in the Tarai region pushed people to migrate.⁷⁵

The main cause of deforestation in Nepal can be identified as follows:

1. Fuelwood accounts for 75% of the country's energy requirements. Over 80% of the population lives in rural regions, and nearly all of them rely on trees to meet their energy demands. As a result, forests are under immense strain. In comparison to the rate of deforestation, the current rate of tree planting is quite slow.
2. Nepal's cattle industry is primarily reliant on forests and grasslands. Forestry is expected to meet approximately 42% of the total digestible nutrients (TDN) requirement.
3. Lack of understanding among local residents about the value of forests, combined with the government's failure to provide alternate energy sources for the local people.⁷⁶

Ilam has the potential to grow its tourism industry. Ilam's natural scenery, pleasant weather, short hiking trails, tea estates, small hills with lush forests, snow-capped mountains, and friendly locals are what make it a popular tourist destination, because of this scenic beauty, Ilam has a great chance to grow its ecotourism industry. The region has a diverse population in terms of ethnicity and cultural background in addition to its natural beauty. Maipokhari, Gajurmukhi, Pathibhara, Singhabahini, and other places are well-known as holy destinations for religious journeys.⁷⁷

The challenges now the tourism sector facing in Ilam *Quoting a 60-year-old respondent "the natural beauty of Ilam is being destroyed in the name of development. Forests are being cut for construction of big roads. I cried when I visited Sandakpur which also share a border with India. The forest of Tumling was cut for the construction of Ilam road which is not*

⁷⁵ ibid

⁷⁶ R. Gautam and S. Herat, "Environmental Issues in Nepal and Solving Them Using the Cleaner Production Approach," *Journal of Cleaner Production*, 2000. Pp 227

⁷⁷ "CHAPTER-ONE," accessed March 2, 2024,

<https://elibrary.tucl.edu.np/bitstream/123456789/13598/2/Chapter%281%29.pdf>

*required to build that big road in that area. Their main motive is also not road but to cut the trees from the forest and fill their pockets. Red Panda is not available now because they are destroying maling (local name) on which the pandas survive for food. The tourism sector in Ilam has gone down. Hotel is in crisis. People would rather prefer to go to Sandakpur from Darjeeling and not from Ilam.”*⁷⁸

Quoting a 30-year respondent *“Taplejung is one of the beautiful places in the Himalayan Region covered with mountains. My father used to tell me that there were no proper road facilities here, they used to walk hours and hours to get foods and medical treatment but now the roads has been developed and this has benefitted in many ways but the natural beauty which was there before is not the same.”*⁷⁹

Water Resource

The International Institute of Water Management in Kathmandu estimates that Nepal contains 2.7% of the world's fresh water reserves, placing it second only to Brazil in terms of global water reserves. Every year, 8.6 million cubic metres of water flow through the valleys of Nepal, giving each of its resident's access to 9000 cubic metres (9 million litres) of water annually. This rate is among the highest in the world, significantly greater than, for example, the one in India, which reaches 1431 cubic metres. Over 6000 rivers and streams that run down the lowlands of Nepal are fed by the thawing of nearly 3000 glaciers and lakes in the world's highest mountains. More than a billion people live downstream in Pakistan and India, where this massive flow of water is a source of drinking water. According to figures from the United Nations Development Programme (UNDP), however, approximately 5 million people in Nepal—18% of the population—do not have access to safe drinking water, and 30.9% of the population is considered to be living in poverty.

Quoting a 45-year-old respondent *“water crisis is also one of the main challenges. There is still shortage of water in Jhapa and Taplejung and people had to migrate because of water crisis though the water scarcity problem is less in Ilam but still some villages in Ilam do have water crisis”*⁸⁰

⁷⁸ Interview of the retired teacher 18th sept 2023

⁷⁹ Interview of the government official 19th sept 2023

⁸⁰ Interview of the government official 17th sept 2023

The main causes of the problems with a lack of water are a lack of infrastructure and a high degree of contamination from agricultural chemicals, fertilisers, and waste water. Nepal's climatology, on the other hand, is largely determined by the monsoon season, which lasts from June to September and determines the thaw in the Himalayas. As a result, climate change poses a major threat to the country. Nepalese hydrologists and climate specialists agree on the importance of gathering more and better water information in order to build management plans based on scientific evidence. The problems of water access and sanitation worsened on April 25th, 2015 with an earthquake measuring 7.8 on the Richter scale.⁸¹

Natural and manmade contaminations are eroding the surface and ground water in the Kathmandu Valley. Surface water is polluted by industrial and domestic trash, as well as untreated sewage discharge from densely packed residential neighbourhoods. The home sewage system is without a doubt one of the leading sources of water pollution that leaks into rivers and lakes, which are the primary sources of drinking water. The capital city of Kathmandu is projected to generate 150 tonnes of waste every day, nearly half of which is discharged into rivers, with families producing 80 percent of the wastewater. Furthermore, due to increased population and establishments, surface water supplies alone are no longer sufficient to serve everyone.⁸²

The biological variety of Nepal, which can be classified as consisting of mountains, hills, and southern plains (known as Terai), is generally thought to be the primary cause of variation in the effects of climate change. Only 51.69 percent of the population has access to piped water, according to data from the Department of Water Supply and Sewerage Management (DWSSM) in 2019. The remaining 48.31% rely on locally owned and privately operated un piped systems, such as private tubewells.

Even if Nepal met the MDGs for water provision, non-piped coverage grew from 36% in 2000 to 44% in 2017 (JMP 2019) when analysed by facility type. Similarly, when analysed by service level, safely managed enhanced water supply sources have fallen from 24% to 18% during the last 20 years (JMP 2021). Nepal has established its objective for the SDGs after meeting the MDGs' basic water supply target (NPC 2016). SDG 6 targets for 2030 include 99% basic water supply coverage, 90% piped water supply coverage, and 95% improved sanitation coverage (NPC 2017). Despite Nepal's best efforts to increase the

⁸¹"Water in Kathmandu: A Crisis in an Area of Abundance," May 29, 2017.

⁸²SahisnaSuwal, "Water in Crisis - Nepal," n.d.

accessibility and sustainability of water supply there are ecological divisions at the national level. Water supply and sanitation coverage appear to be unequal, though not so noteworthy.⁸³

Hydropower in Nepal

In any economy, energy is one of the most crucial strategic components for socioeconomic development. Due to an expansion in population, industry, and consumption around the world, there is a substantial and rapid demand for energy, which has increased the use of non-renewable energy resources like coal and petroleum. This has had detrimental effects on environmental sustainability and hampered international attempts to mitigate climate change. Approximately 60% of the world's total greenhouse gas (GHG) emissions come from non-RE resources. Reducing the energy's carbon intensity is essential for reaching long-term climate change mitigation targets and promoting overall sustainable development.⁸⁴

According to a recent research, Nepal has the capacity to harness approximately 72,000MW of hydropower over 10 main river basins and their sub-basins, as it concentrates on developing its hydropower industry to meet its own energy demands and sell the excess to neighbouring nations.

The abundance of water resources in Nepal has long been recognized, which comprises over 6,000 rivers with a combined length of 45,000 km. These rivers produce an average of 220 billion cubic metres of water runoff annually, according to a report by the Asian Development Bank (ADB).

The state-owned power company Nepal Electricity Authority (NEA) estimates that the country's installed hydropower project capacity is currently 2,800MW. In actuality, the country's hydropower growth has only recently accelerated as the people in the past century were mostly living in darkness.⁸⁵

⁸³ S. Sharma et al., "Drinking Water Status in Nepal: An Overview in the Context of Climate Change," *Journal of Water, Sanitation and Hygiene for Development* 11, no. 6 (September 21, 2021): 859–66, <https://doi.org/10.2166/washdev.2021.045>. pp 3

⁸⁴ Abid Hussain et al., "Hydropower Development in the Hindu Kush Himalayan Region: Issues, Policies and Opportunities," *Renewable and Sustainable Energy Reviews* 107 (June 2019): 446–61, <https://doi.org/10.1016/j.rser.2019.03.010>.

⁸⁵ Prithvi Man Shrestha, "Can Nepal Harness Its Huge Hydropower Potential?," *kathmandupost.com*, November 26, 2023, <https://kathmandupost.com/national/2023/11/26/can-nepal-harness-its-huge-hydropower-potential>.

Quoting a 45-year-old respondent *“We human being think that we have the capacity to do anything but we should think in such a way that we should also live at the same time we should also sustain our nature, environment. If we balance economy, environment and development than we can respond to the human challenges as well as environmental challenges. If the construction of hydropower is balanced keeping the minimum runoff of the river that is 20% that would help in the long run but they do not do that. Biodiversity conservation and hydropower should go hand in hand. Nepal has more than 90% renewable source of hydroelectricity and this will also meet the carbon emission but what about the aquatic ecosystem, they forget about biodiversity conservation. We want development project but the impact should be minimum”*⁸⁶

Quoting a 50-year respondent *“If the river runoff is less, they should not construct on that kind of river. If the river is virgin and no construction is made then those rivers should be left so the future generation can also see what a clean river look likes.”*

Quoting a 40-year-old respondent *“Hydropower construction has benefitted the local people they have access to roads and they can sell their local item, job benefit is there in short form but long term this is not sustainable. If we see investment vs people benefit then investment is high and people benefit is low. We have to work in a win win situation so both the parties get benefitted.”*⁸⁷

Hydropower construction is also causing environmental damage. Nepal is the country with high hydropower potential but at the same time the government is not looking into the long-term consequences that this construction can bring if it does not apply climate friendly approach. Economic development should be there but not at the cost of the environmental damage which will have a direct effect to the people. The infrastructure roads, bridges should be built but proper mapping should be done. There are government policies in Nepal but it is just in paper the implementation work is not been done this is the most serious concern in Nepal.

Natural Disasters

Due to their lower levels of potential for adaptation, developing countries experience greater degrees of environmental insecurity than developed countries. This contributes to the

⁸⁶ Interview of the official of wwf Nepal 17th sept 2023

⁸⁷ Interview of the college professor 18th sept 2023

widespread perception that climate change poses a serious threat to development. Natural disasters make environmental insecurity in developing countries even worse. The impoverished in the developing world experience higher challenges than their counterparts in the north because of a lower level of adaptation to changing weather patterns and a lack of resources to rehabilitate devastated areas after natural catastrophes.⁸⁸

Nepal is located in a region with considerable seismic activity. As a result, earthquakes pose a serious threat to the nation's environmental security. For instance, a 7.8 magnitude earthquake that struck the Barpak area of Gorkha district, 80 km west of Kathmandu, on April 25, 2015, completely destroyed the nation. There were 300 aftershocks of the earthquake, all of which were stronger than 4.0. On May 12, 2015, a second 7.3-magnitude earthquake occurred shortly after. According to NPC (2015), the overall economic losses and damage caused by the earthquakes came to 706.5 billion Nepali Rupees (about \$7.06 billion USD) or around one-third of Nepal's 2013–2014 GDP.⁸⁹

Women Participation

Tewa is a community philanthropy organisation in Kathmandu, it got government registration in the year 1996. The main aim of tewa is to focus on human development and especially women development.

Quoting a 67-year respondent *“The concept of development in Nepal has mainly been seen as construction of big buildings, houses and car. Resources are there in Nepal but they don’t know how to use it wisely. The people in Nepal are very religious, they are ready to give their land for the construction of temples. They spend a lot in religious places.”*⁹⁰

Tewa's guiding principle is to foster community philanthropy with the goals of reducing social costs associated with quick transitions, promoting independent growth, and empowering Nepal's growing women populations. Keeping this perspective in mind, Tewa organises local fundraising events, provides funding to women's organisations across Nepal, and enhances Nepal's human resources via a range of initiatives.⁹¹

⁸⁸Bishnu Raj Upreti, “ENVIRONMENTAL SECURITY and SUSTAINABLE DEVELOPMENT,” in *Environmental Security Approaches and Issues* (USA: Routledge , 2015). PP 221

⁸⁹Bishnu Raj Upreti and EvgeniaNizkorodov, “THE ENVIRONMENTAL SECURITY DEBATE IN NEPAL a PERSPECTIVE from the SOUTH,” in *ROUTLEDGE HANDBOOK of ENVIRONMENTAL SECURITY*, 2022. Pp 153

⁹⁰ Interview of the Tewa worker

⁹¹ “Tewa - Philanthropy for Equitable Justice and Peace,” tewa.org.np, accessed March 2, 2024, <https://tewa.org.np/introduction.php>.

Tewa initially started collecting funds within Nepal but after 2014 they started collecting fund from outside Nepal also. At the beginning they had the view point that Tewa can run smoothly collecting fund within Nepal but with time demand increased from grassroots level, community level and women organisation also increase. The demand was high and the fund which they raised was insufficient so they came up with a new agenda of donor organisation, they would only take support from the organisation if they the organisation liked their agenda. The donors were from Global Level Women Fund, private foundation and community foundation. They made proposal according to their need and the criteria should be women led organisation. Male member can be the advisor but the leadership should be in lady. Tewa has 598 women organisations around Nepal and have organised 128 programmes. They have disbursed around 14cr (NPR).

The focus earlier for Tewa was economic employment, because it was very difficult during that time to talk about women empowerment and women rights in the community level. Gradually they started talking about women rights in awareness programme.

Quoting a 35-year-old staff from Tewa *“Climate Change was not rampant before but during the year 2012it started discussion and how did climate change impact the women. As it started talking about environment awareness which was very new to them, as we were expert in gender rights, fund raising. Tewa tried to reach out with NGOs who worked with environment programmes. We worked with ICIMOD and they started building up their staff capacity”*⁹²

As Tewa was working on women rights, but with the rise of the impact of climate change it was very important to talk about the issue of gender rights, Climate Change has affected the economy of the country so this has initially increased gender-based violence, this has affected women’s health. Tewa started addressing the importance of environment impacts on women to their grant partner. (whom they fund) They started getting funds from GAGGA (Global Alliance for Green and Gender Action), With the consortium led by three organisation, ‘Mama Cash’, ‘FCAM’, ‘Both ENDS’, GAGGA was formed with the help from the Dutch ministry. Mama Cash and FCAM, works with women’s fund and Both ENDS works with environment. GAGGA works with women right and environment justice all over the world.

⁹² Interview of the tewa worker 17th sept 2023

Tewa started collaborating with different local organisation which was working on environment. Namely Prakriti Resources Centre, for the series of capacity strengthening training to their grant partner in Climate Change, climate justice, climate finance. As this training helped them to internalize as how women's right is related to environment justice. The grant partner now had knowledge about how their programme can relate to environment programme LIBIRD (Local Initiatives for Biodiversity, Research, and Development), for the training of sustainable agriculture they started working with Foundation for Sustainable Technology for the training of renewable energy.

Nepal adopted a federal system of government the 10% budget at local level which was allotted to women was cut off. Therefore, Tewa started planning to capacitate the advocacy of the budget that they have to distribute in every municipality for climate. The women's led organisation can go to their local municipality or urban municipality to negotiate for the budget. In this way they are working hand in hand with women's right and environment. The main achievement was that previously projects for e.g. animal husbandry, agriculture they used to focus only on the socio-economic empowerment but now the grant partners are being successful to relate it with environment.

Quoting a respondent *“if we talk about agriculture, the use of pesticide, rainfall in proper time or not it is directly related to climate, the climate will impact production and the production will impact economy”*⁹³

The grant partner now is focusing more on environment sustainability. They are working on waste management, compost fertilizers and how to preserve local seeds rather than using hybrid seeds. They have implemented the method of recycle reuse in their programme. There are also focusing on tree plantation and soil conservation. At the same time, they have come up with the idea of 'analog forestry' which GAGGA had connected them analog forestry basically means that in the barren land they would try to replicate it as the same jungle nearby. This is in the initial phase and some of their grant partners are working on it. They are working on no plastic use and reusable sanitary pad production.

Tewa has also come up with a loose forum along with women rights organisation and environment organisation named climate and development dialogue. There are 11 organization along with Tewa. The main aim of this forum is to policy advocacy. To address

⁹³ Interview of the ICIMOD worker 18th sept 2023

the climate change they send feedback letters to the government. They are organizing national conference every year so that they can make the ministry and the policy makers aware of the climate change. In the year 2022 they had published a research paper on Gender Just Climate solutions along with Prakriti Resources Centre. They have been doing the conference in the province level also after the COVID pandemic.

Influence of India and China on Nepal

The geographical position of Nepal between the two rapidly industrialising global powerhouses, India and China, has the ability to help or hinder its efforts to develop and ensure Human Security. On the one hand, the assistance that is often provided to people in need in order to increase their sense of safety is one manifestation of the interest that both of these powerhouse have in Nepal. On the other hand, because of the size and influence of Nepal's neighbours, Nepal is unable to protest any activity that threatens the Human Security situation in its country. In terms of the economics, Nepal's substantial reliance on India for trade puts its citizens at a disadvantage. Their Human Security is dependent on the movement of products between the countries, including key staples such as food, fuel, and other essential goods. The people of Nepal suffer whenever there is a halt in the transportation of products, whether it is because of difficulties in accessibility or at the whim of the Indian government. In addition, the free border that exists between Nepal and India has an effect on the safety of the people who live in the Tarai region, which is known for having a high rate of criminal activity. The industrialization of China and India has an impact on Nepal as well, raising the possibility that environmental security concerns such as pollution and water scarcity will develop into serious challenges in the future.⁹⁴

On September 20, 2015, Nepal announced a new constitution. The constitution promoted a federal republic political system with three-tier government structure 7 central government provinces, 4 metropolises and 481 rural municipalities. The Madhesi were against the new constitution as the new constitution did not favour their participation in the upper levels of government. They demanded the revision of the state boundaries so that the Tharu and Madhesi communities in Nepal become a separate state.

⁹⁴ Sally Carlton, "Human Security in Nepal. Where to Now?," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu, 2013). Pp286

During this internal problem the Indian government abruptly stopped the supply of food, medicine and petroleum in Nepal from all the 17 transit points. The government of Nepal termed this as the ‘unofficial blockade’ arguing that the country had vested interests in keeping Nepal dependent on its neighbouring country. While the Indian governments denied the trade blockade and said the disruption in supply is the result of political unrest in Nepal.⁹⁵

The blockade disrupted all aspects of life, grinding the country to a halt. People waited in line for days simply to get a few litres of fuel. Factories were fully shut down, schools and institutions were closed, and telecommunications services were on the verge of being shut down. While Nepal and India held continued political and diplomatic talks, the distribution of food and housing relief to earthquake victims was delayed. There were no materials available for reconstruction. This man-made tragedy added to the already severe humanitarian situation brought on by the natural disaster, increasing the demand on both routine and emergency medical services.⁹⁶

As a landlocked country Nepal is completely dependent on India for supplies. Landlocked countries rely entirely on the infrastructure of its transit neighbours to deliver their goods to port. This infrastructure can be weakened due to a variety of factors, including a lack of money, poor government, violence, and natural disasters. Regardless of the origin, poor infrastructure imposes direct costs on trade transiting through a transit country, limiting the capacity of products from landlocked countries to compete in global markets. It also depends on solid political ties with the transit nations. If a landlocked nation and its transit neighbour are engaged in a military or diplomatic confrontation, the transit neighbour is simply able to close borders or enact regulations that obstruct trade. Landlocked nations are especially susceptible to the political whims of their neighbours even when there is no direct conflict.

Relations with neighbouring countries need not be in violent conflict to severely hamper a landlocked country’s economy. For example, India, Nepal’s main transit partner, blocked the border between the two countries in 1990, which was seen as a major factor of the Nepalese panchayat government’s fall. Furthermore, during the negotiation of a bilateral trade deal in 2001 and 2002, India imposed considerable trade restrictions on Nepal. These limits were allegedly imposed in order to extract concessions during negotiations.⁹⁷

⁹⁵ Krishna Pokharel, “The Two-Month Blockade of Nepal Explained,” *The Wall Street Journal*, November 2015.

⁹⁶ Shyam Sundar Budhathoki and Hellen Gelband, “Manmade Earthquake: The Hidden Health Effects of a Blockade-Induced Fuel Crisis in Nepal,” *BMJ Global Health*, 2016.

⁹⁷ Michael L. Faye et al., “The Challenges Facing Landlocked Developing Countries,” *Journal of Human Development* 5, no. 1 (March 2004): 31–68, <https://doi.org/10.1080/14649880310001660201>. pp45

Despite the fact that Nepal is rich in natural resources, particularly hydropower, it fails to develop, use, and exploit this power for sale to neighbouring countries. As a result, the country becomes overly reliant on foreign aid. Only recently has Indian assistance in the construction of transmission lines established synergy between the two countries, and Nepal has been exporting power during the lean season. The renowned 'load shedding' in Nepal has also subsided as a result of power imports from India. India is a big investor in Nepal, which helps to create jobs and opportunities for Nepalese citizens. The Kolkata port handles the majority of Nepal's trade.

Under PM Modi's leadership, India has prioritised increased connectivity and has dedicated resources to create border roads and railways that will reduce poverty in Nepal. Nepal's major trading partner and transit country is India. As a landlocked country, Nepal finds it challenging to be self-sufficient and not rely on its bigger neighbour. The two countries have undertaken various connectivity projects to improve people-to-people connections and economic progress, but the bordering states of UP, Bihar, West Bengal, and Uttarakhand must also be on the same page in terms of giving special attention to border region development. The Nepalese side is more developed than the Indian side in several regions. India is also attempting to find various ways to build interior rivers within its commerce and transit framework in order to offer Nepal with access to the sea.⁹⁸

China has also prioritised Nepal, which is evident following the triumph of the Maoist uprising in 2008. Two communist parties have formed party-to-party relations due to their shared ideologies of Marxism and Maoism. A flurry of high-level visits, as well as the granting of important projects and tenders such as the Bhairahawa International Airport and the Pokhara International Airport to Chinese enterprises, demonstrate that Sino-Nepal relations are taking on a strong economic tone. Although China's economic imprint is expanding throughout South Asia, what distinguishes Sino-Nepal relations in the modern age is the dominance of communist parties in Nepali politics. Originally, these communist groups had brotherly links with Indian communist parties. Although Nepal would prefer to profit from both of its neighbours' economic success and isolate itself from bilateral issues between India and China, its options are limited in this regard.⁹⁹

⁹⁸Raksha Pandey, "Political and Economic Challenges Faced by Nepal and Its Impact on Indo-Nepal Relations," *Indian Foundation*, November 21, 2021

⁹⁹ Ibid

Nepal has long been plagued by a high incidence of poverty, a poor level of human development, and a lack of Human Security, all of which have been exacerbated by a decade-long armed war, disasters, climate change, and vulnerability. Many people are vulnerable as a result of the country's poor economic development rate, unequal distribution of productive assets and income, and limited social security coverage. Furthermore, among weak institutions to defend human life, numerous ethnic and other types of violence have weakened people's human rights. As a result, even after the Nepali people's victory over the centuries-old feudal system and other forms of exploitation, poverty has been both the cause and the outcome of poor Human Security circumstances.¹⁰⁰

Conclusion

This chapter deals with deals Human Security issues in Nepal. As Nepal was in political turmoil for most of the history. Human Security a concept was adopted by the Nepal government much later. There are still measures to be taken by the government of Nepal for the safety of the people. Environment degradation, poverty, water problem, deforestation are the major causes of human security issues in Nepal which needs to be looked upon.

Security in Nepal is still associated with the notion of military defence against foreign threats. The government of Nepal should adopt a human centred approach to address the current security agenda. This will not just improve the living conditions of the people it will also advance the security of the state.

The relationship between environment and Human Security has been studied in this chapter and that environment degradation can cause direct harm to the security of the people. Environmental security can be achieved by comprehensive response mechanisms at the local regional, national and international levels.

The four parameters that were taken for the study were Climate Change, Agriculture, Deforestation and Hydropower. With these specific parameters the study was carried forward to understand the environment challenges in the country.

In Nepal there are many different policies related to environment. There are also policies that bring gender together with environment. The main weakness is the implementation plan.

¹⁰⁰ Yuba Raj Khatiwada, "Poverty: A Threat to Human Security," in *Human Security in Nepal: Concepts, Issues and Challenges* (Kathmandu: Nepal Institute for Policy Studies and South Asia Regional Coordination Office of NCCR (North-South) Kathmandu , 2013). Pp 33

Nepal seems to be signing treaty about Paris agreement and many more but no proper implementation is there. After the formation of federal government in Nepal it has made clear that there should be climate budget in every local government, but the local government officials there has no idea about the budget. This shows the lack of policy implementation in Nepal.

Hydropower development has caused landslides. Road construction is taking place even in the restricted area. The forests have been cut down and due to this water sources have stopped which is directly affecting the people as they have to migrate from their place. Even wildlife and bird's habitat are getting lost due to water issues.

The main issue with the policy formulation of the Nepal government has been the failure to communicate those policies to the local people. They have made policies about environmental challenges but it is very important to make the local people aware of those policies. If the local people are not sensitized, how will they benefit from those acts. If the local people are taught about their responsibility and how they should conserve the environment then it will start working, just formulation of plan is not sufficient. There is a gap between the public and the government. Government of Nepal on the one hand talks about prioritizing environment issues but the public they are not aware about it, and the main reason behind this has been there are still lot of environment related issues in Kathmandu.

While formulating the policies they have not looked from the human perspective. If there is environmental problem then it will have consequences in the ecosystem and this will directly affect human beings. Therefore, in the policy making there should be human safeguarding also. They government has not talked about environment and human safeguarding together, so this is also a huge gap. While making environment policies they must look into how this is affecting the human.

Climate Change is the main issue which needs current attention. It poses serious threats on different sectors such as agriculture, forestry, water resources. The next chapter will deal with the Human Security Environment Challenges in Bhutan.

Chapter IV

Human Security and Challenges to Environmental Security in Bhutan

Introduction

Bhutan is a small 'landlocked' country with a land area of 38,394 km² located on the southern slope of the Eastern Himalayas, the country's north-south border spans more than 170 kilometres, while the east-west dimension is around 300 km.¹ The country is largely forested and mostly mountainous. It shares 470 kilometres of border with Tibet (China's Xizang Autonomous Region) in the north and northwest, 605 kilometres with the Indian state of Sikkim in the west, West Bengal in the southwest, Assam in the south and southeast, and Arunachal Pradesh in the east.

Approximately 70% of the Kingdom is covered by forests, 7% by year-round snow and glaciers, nearly 3% by cultivated or agricultural areas, and 4% by meadows and pastures, with the remaining land being barren, rocky, or scrubland. Bhutan is one of the most severe mountain terrains in the world, with heights ranging from 160 metres to more than 7,000 metres above sea level.²

Bhutan is the least populated country with the population of 787,424, in 2023 a increase of 0.64% from 2022. The population in 2022 was 782,455.³ Bhutan population trend is seeing an increase in every year.

¹Tenzin Wangmo and et.al, "THIRD NATIONAL COMMUNICATION to the UNFCCC" (Thimphu, Bhutan: National Environment Commission, 2020):13

²"Statistical Yearbook of Bhutan" (National Statistics Bureau, October 2021).

³"Bhutan Population Growth Rate 1950-2023," www.macrotrends.net, accessed July 26, 2023, <https://www.macrotrends.net/countries/BTN/bhutan/population-growth-rate#:~:text=The%20current%20population%20of%20Bhutan.>



Source: <https://pin.it/2swKskg0Y>

The former Bhutan Planning Commission made the first attempt to estimate Bhutan's Gross Domestic Product (GDP) in 1984, projecting backwards to 1981. Bhutan's GDP has expanded significantly since then, from Nu. 1,673 million in 1980-81 to Nu.164 billion (about USD 2.4 billion) in 2017. Over the last three decades, the economy has grown at a rate of about 7.5 percent on average. GDP per capita rose from \$2,464 in 2013 to \$3,438 in 2017.⁴

Bhutan is a Himalayan Buddhist Kingdom that is physically small and has limited economic and military resources. Throughout its history, its major neighbours and imperialists faced significant security threats: Tibet in the 17th and 18th centuries, followed by British India in the 19th century. Bhutan, unlike its neighbours in the region, was never colonised; while two world wars and the cold war put the world into an atmosphere of uncertainty and alliances, Bhutan was spared such direct influence. However, Bhutanese society has always been concerned with security issues, and safeguarding the country's sovereign independence and territorial integrity has always been challenging. Since the introduction of planned development in the 1960s, socioeconomic development and progressive political reforms have been included as top priorities.⁵

⁴“TWELFTH FIVE YEAR PLAN 2018-2023” (Thimphu: Gross National Happiness Commission Royal Government of Bhutan, 2019):4

⁵ “Monograph 12 April 2004 Economic and Political Relations between Bhutan and Neighbouring Countries a Joint Research Project of the Centre for Bhutan Studies (CBS) and Institute of Developing Economies, Japan

Bhutan had never imported foreign institutions or political parties, even during the 1960s when the monarchy was under pressure from India, which played a critical role in the modernization process. Concerns were raised at the time concerning India's influence in Bhutan's decision-making process. The role of Indian officers in the kingdom sparked considerable debate in the mid-1960s. Because the Bhutanese administration lacked personnel resources, several Indian officers were in control of day-to-day operations. The king accepted the appointment of an "Indian adviser" to help him in 1963. However, Indian administrative influence had no direct impact on the polity itself.

Bhutan sought India's assistance in drafting its first development plan in 1961. Thereafter it has maintained its economic and political relations with India. Bhutan's foreign relations, including national security matters and diplomatic policy, are guided by India. Bhutan's largest business partner and source of foreign aid is India. Bhutan acts as a strategic barrier between China and India and is poised to become a transit route for trade between the two enormous Asian countries. Many new ideas in terms of culture and technology also reach Bhutan through India.⁶

After Bhutan planned to do away with its policy of isolationism in 1960s, its role in global politics can be seen in terms of its membership in various regional and international organizations and its establishment of diplomatic relations with various states of the world. It joined Colombo Plan in 1962. It also became a member of the Universal Postal Union in 1969. The most important was in the year 1971, when Bhutan became a member of United Nations by a unanimous decision in the General Assembly, and opened the Permanent Mission of the Kingdom of Bhutan to the United Nations in New York. It also became a member of group of 77 in the same year.⁷

Bhutan joined 'ECAFE' (now ESCAP) in 1972. In 1973 it became a member of 'Non-Aligned Movement (NAM)'. Since the inception of South Asian Association for Regional Cooperation (SAARC) in 1985 Bhutan was its member. It is also a member of World Bank and the Asian Development Bank. By the year 1989 Bhutan was a member of almost all the organizations affiliated with the UN. Its involvement can be seen in international affairs as

External Trade Organization (IDE/JETRO) ," :2. https://fid4sa-repository.ub.uni-heidelberg.de/303/1/mono/Ecnmc_Pol_Rel_Bt_Nghbrng.pdf.

⁶ David Zurick, "Gross National Happiness and Environmental Status in Bhutan," *Geographical Review* 96, no. 4 (October 1, 2006): 659, <https://doi.org/10.1111/j.1931-0846.2006.tb00521.x>.

⁷ Parmanand, *The Politics of Bhutan* (Delhi: Pragati publications, 1992): 152

Bhutan attended not less than 67 international conferences, seminars and workshop during 1882-83.⁸

Bhutan is mostly an agrarian economy, with agriculture and livestock farming employing 79% of the population. As a result, agriculture is a key source of employment and a component of Bhutanese daily life. With the introduction of the five-year plans in 1961, infrastructure development began, with a focus on road construction, which had a cascade of repercussions that eventually led to the monetization of the economy. By 1980, the Gross Domestic Product (GDP) was being calculated, and the Bhutanese economy was being evaluated in monetary terms.⁹

Bhutanese people grew up with a strong sense of national pride. To finance its modernization, the kingdom has relied on foreign aid. Nonetheless, foreign donors have acknowledged its approach to development, giving Bhutanese the sense of being masters of their own destiny. Bhutan has historically maintained a low international profile. One of the key goals of its foreign policy has been to preserve its sovereignty.¹⁰

While Bhutan's foreign aid sources have diversified greatly since it became a member of the United Nations, India remains the country's largest provider of external aid, accounting for around 41% of total external outlay during the 8th FYP (1997-2002). India has mostly assisted in the social sectors of education and human resource development, health, hydropower development, agriculture, and roads throughout the previous four decades. Furthermore, India gives partial or full grant support, and economic links have increasingly expanded with cooperation extending to mutually beneficial initiatives such as hydropower development and industrial ventures.¹¹

Bhutan's history can be classified into different era the first pre historic era prior to the spread of Buddhism and the lauded founding of the two renowned temples Jampa Lhakhang in Bumthang and Kyerchu Lhakhang in Paro in the middle of the seventh century, mostly because there isn't a single historical document from this time period that is known to exist in

⁸ ibid

⁹S. Tobgay, "Agriculture Diversification in Bhutan," (International Association of Agricultural Economists Conference, 2006)

¹⁰ Thierry Mathou, "The Politics of Bhutan: Change in Continuity," n.d., 232 <https://core.ac.uk/download/pdf/1323118.pdf>.

¹¹Tashi Choden, "Indo-Bhutan Relations Recent Trends ," :116 n.d., accessed July 26, 2023.

writing or oral form. A lack of history rather than historical features best describes the period before the middle of the eighth century.

Early Historic Period for Bhutan's unification as a single nation, which lasted from the middle of the seventh century to the middle of the seventeenth. This period had some irregular written texts, oral histories and artefacts that enabled to speak about Bhutan with some degree of certainty. This period can be divided into the Early Diffusion and the Later Diffusion. The Early Diffusion begins with the construction of temples in the seventh century and lasts until the well-known guru Padmasambhava arrives in Bhutan. It heralds Bhutan's transition to become a Buddhist nation. Later Diffusion roughly corresponds to the later transmission of Buddhism to Tibet from Nepal and north India.¹²

The Mediaeval time is the time of theocracy that began with the leadership of Zhabdrung Ngawang Namgyal and ended at the turn of the twentieth century. The union of the Bhutanese valleys as one nation marks the beginning of this time. The monarchical rule from 1907 to 1960 or thereabouts known as the Early Modern Period. There was a rising awareness of and interaction with the outside world, and some early modernization attempts began within the country during this period. Most Bhutanese refer to the six decades since the establishment of the legislative assembly, secular education, biomedicine, and motor roads as the Modern Period, and it is during this time that Bhutan experienced the socioeconomic development that characterises modernity in most parts of the world.¹³

Druk Gyalpo Ugyen Wangchuck was crowned the first hereditary monarch of Bhutan by civilian and monastic representatives on December 17, 1907. Because of the influence of Druk Gyalpo Ugyen Wangchuck's power and foresight, Bhutan was united under a central authority for the first time, providing the kingdom with stability and opportunities for prosperity. Druk Gyalpo Ugyen Wangchuck was succeeded by his son, King Jigme Wangchuck, in 1926, and reigned until his death in 1952.¹⁴

Jigme Dorji Wangchuck, the third Druk Gyalpo, in 1960 launched a programme to reform the country's economy and quasi-feudal social order. New roads and hospitals were constructed, and a system of secular schools was formed as an alternative to teaching in Buddhist

¹² Karma Phuntsho, *The History of Bhutan* (India: Random House India, 2013): 89

¹³ *Ibid*: 90

¹⁴ <https://policy.asiapacificenergy.org/sites/default/files/06fyp.pdf>, n.d.

monasteries.¹⁵ Bhutan's relatively recent transition from absolute to constitutional monarchy was intended to give the people a decisive say in the country's affairs. This rise of power can be observed in the context of several unhappy events in the Kingdom that jeopardised both internal and external security, such as the assassination of Prime Minister Jigme Paldan Dorji in 1964 and the attempted assassination of the Druk Gyalpo, (King) Jigme Dorji Wangchuck in 1965. Bhutanese of Nepali ancestry have lately requested the overthrow of the monarchy and the implementation of democratic rights like as civil freedoms, freedom of expression, and so on. These requests are based on charges that the current monarchy is responsible for atrocities against the Nepali people and the suppression of their culture, which has piqued the interest of numerous human rights organisations.¹⁶

Jigme Singye Wangchuk, then 16, succeeded his father as King in 1972. The new king promised to uphold the pact with India while also attempting to strengthen ties with China. Jigme Singye Wangchuk carried on his father's reform and development programmes, directing funds towards infrastructure, education, and health care, while also attempting to conserve Bhutan's unique cultural legacy and natural environment. Bhutan implemented a national policy requiring everyone to follow Buddhist traditions entirely in 1988. Bhutanese of Nepalese heritage, which made up between one-third and one-half of Bhutan's population and were largely Hindu, saw the policy as an attempt to repress Nepalese culture. Violent protests and ethnic animosity erupted, and hundreds of Bhutan's Nepalese residents fled to Nepal (Bhutan's authorities alleged that many of the Nepalese were unlawfully residing in the country). By the early 1990s, it was projected that 100,000 Bhutanese were being accommodated in refugee camps in Nepal.¹⁷

Bhutan had moved to embrace democracy and to eradicate vestiges of its historical isolation from all angles geographic, political, economic, social, and technological by the turn of the twenty-first century. The king's abdication in 2006 and the transfer of the throne to his politically progressive son, Jigme Khesar Namgyal Wangchuk, accelerated this campaign. By the end of 2007, the country had undertaken direct elections for the National Council, the upper chamber of a new bicameral parliament. Elections for the National Assembly, the

¹⁵ Karan P Pradyumna , "History of Bhutan | Britannica," www.britannica.com, n.d., <https://www.britannica.com/topic/history-of-Bhutan>.

¹⁶ Rajesh Kharat, "Bhutan's Security Scenario," *Contemporary South Asia* 13, no. 2 (June 2004): 174, <https://doi.org/10.1080/0958493042000242954>.

¹⁷ Karan P Pradyumna , "History of Bhutan | Britannica," www.britannica.com, n.d., <https://www.britannica.com/topic/history-of-Bhutan>.

lower chamber of the new parliament, in March 2008, completed the transition to a democratic system.¹⁸

Despite being a small country, the country is home to a diverse array of cultures that have been shaped by its hilly terrain, which in the past significantly hindered interactions between different groups in the absence of advanced communication infrastructure. Sharchops (the eastern region people), Ngalongs (the people from the western part), and Lhotshampas (the southern region people) are the three primary ethnic groupings. There are also a number of smaller ethnic groups that are mostly identified by their dialects, in the central Bhutan there are Bumthaps, Mangdeps and Khengpas, Kurtoeps in the east, Brokpas and Dakpas in the north and east, the north west consists of Layaps and Lunaps and in the south are the Doyas.¹⁹

Human Security in Bhutan

According to a recent UNDP assessment on human security, 6 out of 7 people in both wealthy and developing nations experience increasing levels of insecurity. Even Nevertheless, individuals are living longer, healthier, and better lives as a result of years of substantial advancements in development. This demonstrates unequivocally that improvements in global prosperity do not always translate into increased security. To address this startling statistic and the gap between perceived security and development, we must widen our awareness of both the emerging and existing threats to human security, as well as the various processes through which they work.²⁰

The United Nations Trust Fund for Human Security (UNTFHS) provided funds in May 2007 to start "Basic Education/ Literacy and Income Security for Vulnerable People in Bhutan, including Women and Children," the country's first Human Security project. A joint UN initiative coordinated by the United Nations Development Programme (UNDP) focusing on "Delivering as One," the project also involved other UN Participating Organisations (UNFPA, UNICEF, UNV, and WFP) and was implemented by the Royal Government of

¹⁸ *ibid*

¹⁹ "Bhutan: In Pursuit of Sustainable Development" (NATIONAL REPORT FOR THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, 2012):1,<https://sustainabledevelopment.un.org/content/documents/798bhutanreport.pdf>.

²⁰ Tshering Lhamo, "Overcoming Human Security Challenges in the Age of Digital Governance," Kuensel Online, March 12, 2022, <https://kuenselonline.com/overcoming-human-security-challenges-in-the-age-of-digital-governance/>.

Bhutan (RGoB) and civil society partners in alignment with the Tenth Five-Year Plan (2008-2013), which places poverty reduction at the heart of its current development framework.²¹

The project began in early November 2008 with a budget of US\$ 2,175,449.10. The main targeted groups were geographically and socio economically disadvantaged and vulnerable section of the Bhutanese society. This project aimed at benefiting 80,000 people directly or indirectly (activities linked to education, literacy and school sanitation benefiting 60,000 and income and employment, skill training and micro saving schemes reaching another 30,000). With its aim to improve the Human Security of rural communities in Bhutan, activities were carried out by implementing partners which included provision of support to literacy and vocational education, health, income generation and job creation.²²

The civil society organisations (CSOs) were involved, focusing mainly on creating small business and job opportunities and promoting gender equality. With a budget of US\$ 218,000 provided to support subsequent interventions carried out by this national organisations, four main CSOs included the following:

The Tarayana Foundation: Improved tools, equipment, and training for revenue production activities were provided to three isolated communities in Samtse in 2009.

Respect, Educate, Nurture and Protect Women (RENEW): Collaboration with UNFP to assist advocacy and awareness raising on gender issues (reproductive health (RH), gender-based violence (GBV), and women's leadership and rights) and completion of documentation of women's voices and situations across Bhutan (using print and video media) in 2008.

The Handicraft Association of Bhutan (HAB): contributing to the capacity of handicraft training institutes and local artisan groups in order to improve product quality and marketability in both 2008 and 2009.

The Bhutan Youth Development Fund (YDF): In 2008 and 2009, assisted out-of-school children and youth owing to poverty or other socioeconomic challenges to either return to the formal education system, gain employment skills through training programmes, or attend vocational education programmes.²³

²¹"From the Bottom Up: Empowerment and Protection to Strengthen Human Security in Bhutan Civil Society Organization Best Practices and Lessons Learned," 2010:5.

²² *ibid*

²³"From the Bottom Up: Empowerment and Protection to Strengthen Human Security in Bhutan Civil Society Organization Best Practices and Lessons Learned," 2010:5.

Prior to the start of this initiative there was little or no awareness on gender issues (particularly on gender-based violence and women's protection) and very few opportunities or programmes to help women, impoverished students, out-of-school children/youth in tough circumstances.

Quoting a 43-year-old teacher from the centre for Bhutan and GNH studies *“GNH we basically look into the physical aspects like health, relationship in the community, the safety and security in the community. It also has a domain which talks about environment that you live in, the human wildlife conflict, how is it affecting the environment that you live in. If this is Human Security, we are looking into these aspects of Human Security under GNH”*²⁴

Quoting a 35-year respondent from the centre for Bhutan and GNH studies *“we in Bhutan try to preserve our environment, in the western countries the main objective is to only increase the GDP. We could also have been a rich nation by selling the forest assets but our main policy is to balance between economic development and non-economic development. There are mine sites in Bhutan which is commercially buyable but they don't want to destroy the mountain. In the central region of Bhutan there is viable copper deposit but the Bhutanese government does not want to mine and risk the mountain there.”*²⁵

Gross National Happiness and Human Development

According to Bhutanese culture they believe that material abundance does not equate to happiness and GDP is not a reliable indicator of growth. The nation created gross national happiness (GNH), a new progress indicator, to make up for GDP's shortcomings. Bhutan's GNH concept gained international prominence when the UN adopted a resolution addressing GDP limitations and the need to acknowledge happiness and well-being as basic human and national goals. The United Nations raised awareness of the topic and released the World Happiness Report in 2012, which was conducted by global experts on happiness and well-being.²⁶

Bhutan is renowned for its distinctive Gross National Happiness (GNH) ideology, which directs its development plan. The abundance of water resources in the valleys creates ideal

²⁴ Interview of the teacher from centre for Bhutan and GNH studies 6th oct 2023

²⁵ Interview of the scholar from centre for Bhutan and GNH studies 6th oct 2023

²⁶ Maria-Teresa Lepeley, “Bhutan's Gross National Happiness: An Approach to Human Centred Sustainable Development,” *South Asian Journal of Human Resources Management* 4, no. 2 (November 8, 2017): 174–84, <https://doi.org/10.1177/2322093717731634>.

circumstances for the production of hydropower, which has fueled economic expansion by providing nearly everyone with affordable electricity. Tourism and fiscal revenues from the sale of excess hydropower to India have allowed the nation to make significant investments in the growth of its human capital development. As a result, outcomes in the areas of service delivery, education, and health have significantly improved. Bhutan has made significant strides towards eradicating severe poverty and advancing gender equality, and it continues to focus on issues of social inequality and geographic disparities.²⁷

GNH requires a multifaceted approach to development that aims to maintain harmony and balance among economic forces, environmental preservation, cultural and spiritual values, and good governance. Happiness as a development aim has deep roots in Bhutan's Buddhist culture.²⁸ His Majesty Jigme Singye Wangchuck, Bhutan's fourth King, developed the notion of Gross National Happiness (GNH) in 1972. GNH served as a guiding philosophy for the absolute monarchy for years after its creation, based on four pillars:²⁹

1. Equitable Economic Development: promoting social peace, stability, and unity while maintaining equity between people, groups, and regions to aid in the creation of a society that is just and compassionate;
2. Environmental Preservation: ensuring that development activities are carried out without harming the biological productivity and diversity of the natural environment, within the bounds of environmental sustainability;
3. Cultural Resilience: fostering a sense of respect for cultural heritage and safeguarding the moral and emotional principles that make people happy and protect them from the detrimental effects of modernisation;
4. Good Governance: Developing the nation's institutions, human resources, and systems of governance as well as expanding opportunities for people at all levels to actively participate and make decisions about development that are authentic to the circumstances and needs of their families, communities, and the country as a whole.

The four pillars of GNH were employed by the King, who had unlimited power, to direct the creation and application of policies in Bhutan. He mentioned that gross domestic product

²⁷ World Bank, "Overview," World Bank, October 6, 2021, <https://www.worldbank.org/en/country/bhutan/overview#1>.

²⁸ "Bhutan National Human Development Report" (The Planning Commission Secretariat Royal Government of Bhutan, 2000).

²⁹ Alejandro Braun, "Gross National Happiness in Bhutan: A Living Example of an Alternative Approach to Progress," *Social Impact Research Experience Journal (SIRE)*, 2009:

(GDP) is less important compared to GNH as the GDP alone could not deliver happiness and well-being. The limitations of GDP as a measure of progress are that (i) it does not distinguish between GDP resulting from good development and GDP resulting from bad development; (ii) in its measurement, it does not adequately value natural, human, and social capital; (iii) it does not value free time and leisure; (iv) it does not value unpaid work; and (v) it does not explicitly address equity. GNH makes an effort to address these flaws by using social welfare proxy measurements.³⁰

The notion of GNH serves as the foundation for the Royal government of Bhutan RGoB's development goals and strategy, with a focus on balancing material, psychological, and spiritual development. It is a development theory that explains the multidimensionality of happiness through four major pillars. It is provided as a substitute to the material emphasis of the GDP or even the human development index. The GNH Commission assesses GNH using an index measure of human well-being based on Bhutanese values that are divided into nine domains and comprise 124 variables.³¹

Bhutan is aware of the inconsistencies in assessing happiness.

"No one can guarantee human happiness, and the choices people make are their own concern. But the process of development should at least create a conducive environment for people, individually and collectively, to develop their full potential and to have a reasonable chance of leading productive and creative lives in accord with their needs and interests"³²

Bhutan aims at establishing situations within which individual fulfilment can be acquired, specifically in the four essential components of development mentioned above, and makes an effort to prove progress towards those conditions. The notion is that by monitoring progress towards the happiness criteria, it may be able to actually measure the happiness goals.³³

According to the human development perspective, the aim of development is to increase human potential. All development initiatives place people and their primary concerns at the

³⁰ Karma Ura, "The Experience of Gross National Happiness as Development Framework," *ADB South Asia Working Paper Series* 42 (2015):9, <https://doi.org/10.2139/ssrn.2941860>.

³¹ Robin Sears et al., "Forest Ecosystem Services and the Pillars of Bhutan's Gross National Happiness" (Center for International Forestry Research, 2017):14, https://www.jstor.org/stable/pdf/resrep16275.8.pdf?refreqid=fastly-default%3A214f69ad3ba1eebbadbcd3309c072efd&ab_segments=0%2Fbasic_search_gsv2%2Fcontrol&origin=&initiator=search-results&acceptTC=1.

³²"Bhutan National Human Development Report" (The Planning Commission Secretariat Royal Government of Bhutan, 2000).

³³ David Zurick, "Gross National Happiness and Environmental Status in Bhutan," *Geographical Review* 96, no. 4 (October 1, 2006): 662, <https://doi.org/10.1111/j.1931-0846.2006.tb00521.x>.

centre and prioritise enhancing the quality of people's lives. This viewpoint sees income and commodity production as only tools for raising standard of living. The ultimate objective is to increase people's capacities or freedoms to pursue their most important values. As a result, the success or failure of development is measured not just in terms of an increase in incomes or real GDP per capita but also in terms of the improvements in living standards that those policy interventions result in.³⁴

The GNH development philosophy is Bhutan's interpretation of the global notion of sustainable development. GNH is enshrined as a state policy in the Kingdom's Constitution. Furthermore, the Constitution outlines the responsibilities and rights of the parliament, administration, and people in protecting and improving the environment. The Royal government of Bhutan in 1999 published 'Bhutan 2020: A Vision for Peace, Prosperity, and Happiness,' which articulated the GNH vision, objectives, strategies, priorities, and milestones, and imagined what the country would be like in 2020 if the envisaged objectives and priorities were met. With gradual transformation in the social, economic, and governance landscapes in accordance with shifting development demands, the country has reached the half-way point of the planned landmark. Its Human Development index has also increased. Bhutan's HDI was ranked 132nd out of 182 nations in 2007. Bhutan has made steady growth in recent years. According to the latest 2023 HDI Bhutan ranks at 127 and made its position better than India which ranks at 132.³⁵

GNH is still a strong, if not fully developed, development goal due to its close ties to the Bhutanese Monarch. King Jigme Khesar Namgyel Wangchuck has been described as the '...conscience of GNH.' While GNH is meant to be used by decision makers to plan and monitor progress, it is still a work in progress to translate it into practical programmes, targets, and indicators. The philosophical understanding of GNH is personal contentment; GNH is a responsibility of the Bhutanese government. Bhutan is the only country in which the government has an explicit mandate to create conditions in which residents can pursue happiness.³⁶

³⁴"Bhutan National Human Development Report" (The Planning Commission Secretariat Royal Government of Bhutan , 2000).

³⁵"Bhutan National Human Development Report" (Royal Government of Bhutan, 2011): 16

³⁶"Ten Years of Democracy in Bhutan" (United Nations Development Programme Bhutan & Parliament of the Kingdom of Bhutan , 2019):

However, as more Bhutanese students pursue further education in countries like India, the US, and other countries, and as Bhutan gradually opens up to the outside world, the idea of GNH has come under scrutiny and occasionally criticised for not being quantifiable or statistically sound. The Centre for Bhutan Studies (CBS), which is situated in the country's capital city of Thimphu, has created a GNH index in response to scepticism from both Bhutanese and outsiders. There are nine domains in the GNH index. The previous four pillars of GNH are included in the nine domains. The first three domains are well-known in terms of human development: living standards (such as income, assets, and housing), health, and education. The following three are somewhat newer: the use of time (and time poverty), good governance, and ecological resilience. Last and more innovative there is psychological well-being (which includes overall happiness as well as emotions and spirituality), communal vitality, cultural diversity, and resilience.³⁷

Natural resources and environmental circumstances are important factors of human development and GNH prospects since they have a direct impact on people's quality of life and livelihood opportunities. Economic growth is primarily reliant on natural resources. The approach to the environment in traditional growth models has been concentrated on exploitation of these resources, with a perceived trade-off between economic progress and the environment. Human development and GNH, on the other hand, openly recognise the need to balance growth and ecological, livelihood and nature. Conservation and sustainable environmental usage are thus critical considerations that are essential to both notions and important for present and future generations.³⁸

The Five-Year Plans (FYPs), the first of which was launched in 1961, are the primary programmatic vehicle for implementing development plans, programmes, and projects. Twelve FYP has been implemented so far. The FYPs are developed at the central, sectoral, dzongkhag, and gewog levels and then implemented into yearly development plans and budgets at the various levels over five-year cycles. They have gradually instilled notions and techniques to sustainable development. Poverty reduction has evolved into a major development goal since the Ninth FYP. The Tenth FYP strengthens the fight against poverty

³⁷ Karma Ura et al., "GNH and GNH Index" (The Centre for Bhutan Studies, n.d.):9 https://ophi.org.uk/wp-content/uploads/GNH_and_GNH_index_2012.pdf.

³⁸ "Bhutan National Human Development Report 2005" :16(Royal Government of Bhutan), accessed July 27, 2023, https://planipolis.iiep.unesco.org/sites/default/files/ressources/bhutan_hdr.pdf.

and aims to reduce the number of people living in poverty from 23.1% at the start of the plan period to 15% or less by the end of the plan period. Additionally, it acknowledges that concerns related to the environment and gender equality affect all areas of development.³⁹

A Reference Group has been formed to provide capacity building assistance and direction on the integration of the environment, climate change, and poverty (ECP) into development plans and programmes. This group created ECP mainstreaming recommendations, which were later incorporated into the instructions for preparing the Eleventh FYP. Concurrently, the Eleventh FYP National Key Result Areas include sustainable use of natural resources, environmental conservation, climate change adaptation and mitigation, and gender parity.⁴⁰

Bhutan's primary development success over the last twenty-five years before 1987 has been the creation of a road network over the harsh mountain terrain that connects the country's main regions. The improved road network, notably the feeder and district roads, has opened up additional forestry areas and made it simpler for agricultural communities to access markets in India. The establishment of a social infrastructure, combined with a greater emphasis on education, has improved literacy to 12%. Bhutan has also developed a small but highly dedicated cadre of development administrators.⁴¹

Bhutan's economy has grown rapidly since 1981, as it transitioned from a non-monetised traditional economy focused on agriculture and domestic production to a contemporary wage-based trading economy. Agriculture production is being diversified, and private-sector projects have been encouraged to develop. The economy developed at an amazing 6% per year on average during the 1990s, spearheaded by manufacturing and other secondary sectors. This has led to widespread belief that growth will continue, despite numerous limits, including demographic shifts, an increasingly educated populace, and exposure to international norms.⁴²

³⁹ "Bhutan: In Pursuit of Sustainable Development" (NATIONAL REPORT FOR THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, 2012):6, <https://sustainabledevelopment.un.org/content/documents/798bhutanreport.pdf>.

⁴⁰ *ibid*

⁴¹ Pradyumna P. Karan, "Environment and Development in Bhutan," *Geografiska Annaler. Series B, Human Geography* 69, no. 1 (1987): 17, <https://doi.org/10.2307/490408>.

⁴² Bob Frame, "Bhutan: A Review of Its Approach to Sustainable Development," *Development in Practice* 15, no. 2 (2005): 218, https://www.jstor.org/stable/pdf/4030082.pdf?refreqid=excelsior%3A11c7298bcf45f1dddb8121f057894331&ab_segments=&origin=&initiator=&acceptTC=1.

Human Rights in Bhutan

Bhutanese monarchy has attempted to construct a society based on Buddhist values, seeking happiness through its national health system. The government has long recognised the importance of a national health system as a means of achieving GNH, with the 2008 Constitution explicitly stating that the government "shall provide free access to basic public health services in both contemporary and conventional medicines" and, drawing on the Universal Declaration of Human Rights, shall "endeavour to ensure security in the event of sickness and disability or lack of adequate means of livelihood for reasons beyond one's control."⁴³

However, Bhutan's human rights limitations are a result of the country's GNH-based efforts to forge a unique path for both development and health. Therefore, the government of Bhutan has come up with the citizenship policy that are restrictive as it views minority inundation to be a threat for the states survival. Similar to those states that have been suppressing the rights of the minorities in order to establish national identity by excluding minority populations. Bhutan also to frame the Bhutanese identity and achieve its distinct development goals, established its first 'one nation, one people' policy during the 1990s.⁴⁴

Instead of encouraging the existing multicultural national identity, the shift in the policy led to the mass migration of minority groups, oppression of the people who were not Buddhist and it created a major Bhutanese refugee outside the kingdom. During the 1990s, upto 1 million Nepali-speaking Hindus (Lhotshampas) were forced to leave the country by means of physical repression, forced eviction, or official coercion, they fled to Nepal refugee camps and were subsequently denied Bhutanese citizenship and land ownership of Bhutan. As a practice of ethnic cleansing, the vacated southern agricultural lands were later allocated to landless northern citizens of Bhutan. The Bhutanese government faced international condemnation for violating minority rights. In response to this criticism, Bhutan first attempted to distance itself from the global human rights framework by claiming not to have ratified the human rights covenants of the UN's: the International Covenant on Civil and

⁴³ Benjamin Mason Meier and Averi Chakrabarti, "The Paradox of Happiness: Health and Human Rights in the Kingdom of Bhutan," *Health and Human Rights* 18, no. 1 (2016): 193–207, https://www.jstor.org/stable/pdf/healhumarigh.18.1.193.pdf?refreqid=fastly-default%3Ac3c3e4dbe3984a012ff33f20ed5f42d7&ab_segments=0%2Fbasic_search_gsv2%2Fcontrol&origin=&initiator=search-results&acceptTC=1.

⁴⁴ *ibid*

Political Rights (ICCPR) or the International Covenant on Economic, Social, and Cultural Rights (ICESCR).

The Bhutanese government attempted to distance itself from the ICCPR's safeguarding of minority rights by rejecting political and civil rights. However, as the foundational ICCPR safeguards have developed into the global body of minority rights guaranteed by international law, Bhutan is still being condemned for allegedly infringing the rights of the Lhotshampa minority.⁴⁵

Millennium Development Goals

Bhutan has advanced significantly towards reaching the Millennium Development Goals and in terms of socioeconomic development. However, challenges still persist, in Bhutan, 12 percent of the population still lives in poverty. Most of them residing in rural areas depend on farming for their livelihood. Bhutan faces challenges to its development due to severe weather patterns and harsh geophysical events. The delicate mountain environment of Bhutan is especially susceptible to the growing dangers associated with global warming.⁴⁶

The MDGs prioritise reducing poverty and human well-being as global development goals. Bhutan's commitment to the Millennium Development Goals (MDGs), which encompass eight development goals that the UN's 193 member nations have promised to accomplish by 2015, is central to its sustainable development policy. The Millennium Declaration is guided by universal values such as equality, freedom, tolerance, respect for nature, and shared responsibilities, all of which inspire and are deeply ingrained in the GNH value system, which emphasises happiness as the most important and desirable outcome of development. As a result, the goal and notion of GNH and the Millennium Development Goals (MDGs) reflect common inspiration and ideals. Bhutan regards the MDGs as a vital developmental strategic framework that contributes to the attainment of GNH and the nation's long term development goals, and has strategically incorporated them into the FYPs.⁴⁷

Bhutan has made strong and persistent progress towards attaining the MDGs, and it was potentially on track of the MDGs. Its remarkable achievement in improving access to

⁴⁵ *ibid*

⁴⁶ "ENVIRONMENT ASSESSMENT SUMMARY 1," n.d., <https://www.adb.org/sites/default/files/linked-documents/cps-bhu-2014-2018-ena.pdf>.

⁴⁷ "Bhutan's Progress: Midway to the Millennium Development Goals," 2008:3, <https://www.aidsdatahub.org/sites/default/files/resource/bhutan-progress-midway-millennium-development-goals.pdf>.

safe drinking water and sanitation, safeguarding and managing the country's natural capital, and delivering improved basic health care and equitable primary education. Several targets, such as eliminating malnutrition in children and halving the number of people without access to adequate drinking water and sanitation, were met before the target year.

The country's macroeconomic performance was rated as satisfactory by the Asian Development Bank, International Monetary Fund, and World Bank and a positive outlook for the medium term. According to the World Bank's Country Policy and Institutional Assessment, the country's macroeconomic performance was ranked as one of the best in the region in 2005, with a score of 5.2, and its policies and institutions were evaluated as among the top three in the region, with a score of 3.8 over the last two decades. Growth in the economy has averaged over 7%, has been highly capital intensive, and has been fueled mostly by fast expansion of the hydropower and construction sectors. The quicker expansion in these sectors is changing the economy's structure, with the Renewable Natural Resources (RNR) sector, which includes agriculture, cattle, and forestry, falling from 37.8% of GDP in 1990 to 21.8% in 2005. For the same period, the combined contribution of the hydropower and construction sectors scaled from 21.2% to 27%. Agriculture, however, is the single largest contributor to the national economy and is vital since it provides a living for the majority of Bhutanese.⁴⁸

Primary areas of achievement included child malnutrition reduction, access to safe water for drinking and improved sanitation services, forest and biodiversity protection and management, child and maternal mortality reduction, and gender-parity in primary education enrolment. Furthermore, as a result of the Royal Government's constant interventions, the goal of halving the proportion of persons living below the poverty line is very much within sight.⁴⁹

Sustainable Developmental Goals

The eight Millennium Development Goals (MDGs), which were established with a 15-year time span between 2000 and 2015, served as the foundation for the new sustainable development agenda. The Millennium Development Goals (MDGs) were the first attempt to

⁴⁸ "BHUTAN MilleNNiUM DevelopMeNT GoAls NeEds AssessMeNT and CoStiNG RepoRT (2006-2015)," 2007:3 <https://www.undp.org/sites/g/files/zskgke326/files/publications/MDGNAandCostingReportFinalNov2007.pdf>.

⁴⁹ *ibid*

transform human development into a brief, focused, basic, and measurable set of goals and targets, with a concentration on the poor. The MDGs had a genuine impact on people's lives, and there is little doubt that the legitimacy of the new sustainable development agenda is founded on the momentum and experience provided by the MDGs. The SDGs call for a paradigm change to occur immediately, building on the MDGs and extending their goals in order to achieve sustainable development in its three key dimensions: economic development, social inclusion, and environmental sustainability.⁵⁰

The SDGs are meant to be both global and action-oriented while also having a national and local focus. The adoption of the SDGs was hailed as a turning point for the world by Ban Ki-moon, the then-secretary-general of the UN:

“This is the People’s Agenda, a plan of action for ending poverty in all its dimensions, irreversibly, everywhere, and leaving no one behind. It seeks to ensure peace and prosperity, and forge partnerships with people and planet at the core. The integrated, interlinked and indivisible 17 SDGs are the people’s goals and demonstrate the scale, universality and ambition of this new Agenda.”⁵¹

The 12th Five Year Plan of Bhutan’s development aims to create a "Just, Harmonious and Sustainable Society through enhanced decentralisation." The definition of a sustainable society is "a society able to sustain its social, economic, and environmental development needs." This is in accordance with the Sustainable Development Goals (SDGs), which aim to eradicate all forms of poverty in a way that is inclusive and safeguards the environment for both the present and the future.⁵²

In Bhutan, Local government (LG) were created to make it easier for individuals to actively participate in their own development. This is their civic duty. Efficiency in service planning and delivery is another expectation placed on local government. They are also responsible for preserving culture and heritage and fostering peace among the community. While local governments do not have legislative powers, they can nonetheless enact policies within the

⁵⁰ “The Druk Journal 6,” accessed August 1, 2023, <http://drukjournal.bt/wp-content/uploads/2021/08/The-SDGs.pdf>.

⁵¹ Pio Smith, “The Sustainable Development Goals: No More Business as Usual” (The Druk Journal 6, n.d.):8, <http://drukjournal.bt/wp-content/uploads/2021/08/The-SDGs.pdf>.

⁵² Tashi Pem, “ the Role of Local Government in Sustainable Development ” (The Druk Journal):48, accessed August 1, 2023, <http://drukjournal.bt/wp-content/uploads/2021/08/Role-of-Local-Government-in-Sustainable-Development.pdf>.

bounds of national legislation. Regulation of air, water, noise, and other impacts on the environment is a duty of LG, according to the Local Government Act of 2009. The decentralisation of sustainability duties at various levels of government is illustrated by this example. Environment-related legislation is created at the central level; LG creates regulations for their execution, oversees their implementation, and imposes sanctions as necessary.⁵³

Environment Security in Bhutan

The wise governance and steadfast conservation ethic of the Bhutanese people are responsible for preserving the country's tremendous biological diversity. There are active customary laws and norms, particularly those governing the usage of community grazing area, irrigation channels, forests, breeding stock, foot pathways, shrines, bridges, and so on. These are owned and used by the community. To govern its usage equitably and efficiently, sophisticated institutional systems have arisen. Bhutanese culture is thus founded on traditional rules, norms, indigenous knowledge systems, and institutions. His Majesty, King Jigme Singye Wangchuck, has worked to ensuring that economic development and environmental and cultural integrity are not mutually exclusive, but are crucial to Bhutanese development's long-term viability.⁵⁴

Bhutan today has over 51.44% of its land area under protected area management and over 69.71% of the country under forest cover as a result of wise leadership and a strong tradition of environmental protection and preservation. While many parts of the world have experienced frightening deforestation rates, Bhutan's forest cover has actually increased over the last decade. The 73rd session of the National Assembly in 1995 demanded that the country keep 60% of the country under forest cover at all times.⁵⁵

Bhutan is one of the few nations in the world with net greenhouse gas (GHG) emissions that are negative due to its extensive forest cover and small number of polluting enterprises. The CO₂ emission in 2021 for Bhutan was 2 million tonnes which increased from 0 million tonnes in the year to 1972 to 2million tonnes in 2021 which is growing at an average annual rate of

⁵³ *ibid*

⁵⁴ "Environmental Legislation And Institutions In Bhutan" (South Asia Cooperation For Environment Programme (Sacep) Colombo, Sri Lanka, N.D.):34 Accessed July 27, 2023.

⁵⁵ *ibid*

8.89%.⁵⁶ In addition, the Royal Government of Bhutan released a statement in December 2009 during the Copenhagen Climate Change Conference called "Declaration of the Kingdom of Bhutan- The Land of Gross National Happiness to Save our Planet," in which the government vowed to keep Bhutan's status as a net sink for greenhouse gases by making sure that greenhouse gas emissions do not exceed the capacity of its forests for sequestration. Although the overall range of atmospheric air and water quality is still very good to exceptional, there are some urban and industrial regions where the quality of the air and water is declining because of traffic and industrial pollutants, construction activities, and unhygienic waste disposal and living conditions.⁵⁷

The Paro Resolution on Environment and Sustainable Development of 1990 is a significant milestone in Bhutan's ongoing efforts to conserve its magnificent natural environment while improving the quality of life of its citizens; it expresses eloquently the collective concerns of the Bhutanese people about potential threats to the environment and lays out a guiding philosophy for the future to avoid such threats. The resolution's attachments provide specific proposals for policies and activities to maintain the long-term compatibility of environmental protection and socioeconomic development. The Paro Resolution also emphasised the significance of developing a National Environment Strategy for Bhutan, as well as the need to create specific responsibility for environmental preservation. The National Environment Commission was established as a high-level multi-sectoral institution which is in charge of all environmental issues.⁵⁸

The National Environment Commission (NEC) is a governmental policy-making and regulatory body tasked with protecting the country's natural resources. The Commission is a high-level, cross-sectoral body of senior ministers and officers led by the Minister of Agriculture. The NEC was established in 1992 and is responsible for developing environmental policy, establishing environmental standards and regulations, and ensuring the use of tools such as environmental impact assessments. The NEC also collaborates closely

⁵⁶ "Bhutan CO2 Emissions, 1970-2022 - Knoema.com," Knoema, accessed July 31, 2023, <https://knoema.com/atlas/Bhutan/CO2-emissions#:~:text=In%202021%2C%20CO2%20emissions%20for.>

⁵⁷ "Bhutan: In Pursuit of Sustainable Development" (NATIONAL REPORT FOR THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, 2012):3 <https://sustainabledevelopment.un.org/content/documents/798bhutanreport.pdf>.

⁵⁸ "Environmental Legislation And Institutions In Bhutan" (South Asia Cooperation For Environment Programme (Sacep) Colombo, Sri Lanka, N.D.):43 Accessed July 27, 2023.

with donor organizations on environmental projects and represents Bhutan at national and international environmental debates.⁵⁹

The Royal Government of Bhutan (RGoB) has prioritised environmental conservation, management, and sustainable development. Bhutan's environmental legislation and administrative mechanisms are founded on centuries of tradition. Some of the RGoB's environmental policies are illustrated below:

- Improvements to existing laws, rules, and notifications, as well as the adoption of new legislation and policies, are required to ensure the sustainable use of natural resources.
- Preparation of master plans for several economic sectors, such as forestry, power, and roads. These plans involve development planning, minimising environmental effect, and guaranteeing the sustainable use of natural resources; and
- Economic incentives are used to encourage resource sustainability. Increasing the participation of community and non-governmental organisations (NGOs) in environmental policy planning and implementation.⁶⁰

The ecosystem and biological balance of the Bhutan Himalaya are particularly vulnerable to both natural and man-made changes. Its small population and limited land use activities have historically had minimal impact on the overall ecological balance. However, since the 1960s, far-reaching changes have been set in motion, mostly as a result of development operations that have resulted in population growth and redistribution. Initially, only the larger settlements were affected by these developments. They have recently begun to spread to more rural locations where people rely on traditional ways of agriculture and animal husbandry for a living.⁶¹

The safeguarding of the environment has been elevated to the second major guiding principle in Bhutan due to concerns about the possible negative effects of growing economic activity and population growth on the delicate mountain ecosystem. However, according to Buddhist political philosophy, the existence of state is not just for the wellbeing of human beings but also for the wellbeing of all sentient creatures. Thus, it has an inherent obligation to protect the environment. Bhutan is often recognised as a leader in environmental conservation

⁵⁹ Ibid

⁶⁰ Ibid 44

⁶¹ Pradyumna P. Karan, "Environment and Development in Bhutan," *Geografiska Annaler. Series B, Human Geography* 69, no. 1 (1987): 25, <https://doi.org/10.2307/490408>.

because of its rich biodiversity and the lack of hazardous emissions or pollution in its a, air, soil and water.⁶²

The three factors that contribute to the environment legacy of Bhutan are (a) the existence of indigenous institutions for the management of commonly owned assets, such as wood lots, water for irrigation, sacred forests, grazing lands and citadels of mountain deities; (b) a strong conservation culture and Buddhist ethics (c) the implementation of significant laws, most of which were passed between 1969 and 1981. These components primarily uphold sustainable resource usage and are a reflection of Bhutan's conservationist philosophy.

In other nations, modernization is frequently equated as a march towards technological and industrial society that has a detrimental and frequently irreversible effect on the environment. Bhutan's approach to development aims to move the nation from being a late starter to modernity but to a society that is sustainable, post-modern or post-industrial civilization, ideally with Buddhist welfare attributes. The Royal Government of Bhutan makes an effort to mitigate the detrimental effects of modernity on the environment through its development initiatives.⁶³

The nation's environmental policy intersects with economic development in several important areas, including the development of hydropower for household use and export, development in the industrial sector, self-sufficiency of the food, domestic use and farm employment. Bhutan has recognised the need for capacity development in the areas of environmental education, collection of data, leadership, and environmental legalisation in order ensure help that these acts are linked to conservation.⁶⁴

The Forest and Nature Conservation Act of 1995 and the Biodiversity Action Plan of 1998 are the two documents that offer for the protection of natural environment. The 1992 Environmental Assessment Guidelines, which came before the present National Environment strategy, are supplemented by these papers. Bhutan's intentions to preserve parks and designated natural areas will strengthen its laws for controlling the environmental effects of

⁶² Karma Ura and Sonam Kinga, "Bhutan-Sustainable Development through Good Governance," 2004, <https://documents1.worldbank.org/curated/en/880451468743944567/pdf/308210BHU0Governance01see0al-so0307591.pdf>.

⁶³ *ibid*

⁶⁴ David Zurick, "Gross National Happiness and Environmental Status in Bhutan," *Geographical Review* 96, no. 4 (2006): 657–81, https://www.jstor.org/stable/pdf/30034142.pdf?refreqid=fastly-default%3Ae789baf4061f84b2065f332d384238eb&ab_segments=&origin=&initiator=&acceptTC=1.

forestry, industry, and agriculture. The main policy governing the management of protected areas and wildlife is the Forest and Nature Conservation Act. Together with the Bhutan Trust Fund for Environmental Conservation and the Royal Society for the Protection of Nature, the Ministry of Agriculture and the Forestry Services Division share administrative responsibilities.⁶⁵

Quoting a 45-year-old from the Centre of Bhutan & GNH studies *“The people of Bhutan are really not aware that the environment damage could lead to destruction of the people living there but some of the environmental security is actually invaded into their belief system, for e.g. in Bhutan culture if there is a water source they cannot cut the trees there because whenever there is water source and trees nearby than that is the domain of spirits and deities and to cut them will antagonise the spirits and deities and this will harm in terms of bad health, bad yield and this can be linked with the modern concept of environment security.”*⁶⁶

Quoting a 40-year-old respondent from the *“In Bhutan we try and preserve our green environment. In our Constitution of kingdom of Bhutan Article 5 talks about the safeguarding of the environment. We the people of Bhutan also prioritise clean and green environment.”*⁶⁷

Multilateral Environmental Agreements

Continuous participation in global sustainable development mechanisms, particularly multilateral environmental agreements (MEAs) resulting from the Rio Summit in 1992, has assisted the Royal Government in consolidating its sustainable development agenda and strengthening policy and programmatic instruments to pursue sustainable development goals and objectives within the overall framework of the GNH development philosophy. On June 11, 1992, Bhutan signed the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio Summit. Following that, on August 25, 1995, the government ratified both of these Conventions. The National Environment Commission acts as the national focal agency for the two conventions. The third of the Rio Conventions, the United Nations Convention to Combat

⁶⁵ *ibid*

⁶⁶ Interview of the government official 6th oct 2023

⁶⁷ Interview of the government official 6th oct 2023

Desertification (UNCCD), was signed on August 20, 2003. The national focal agency is the Department of Agriculture and Ministry of Agriculture and Forests.⁶⁸

Three Biodiversity Action Plans was produced by Bhutan as a party to CBD, the first one was formed 1998, the second in 2002, and the third in 2009, progressively assessing and upgrading them as living policy documents to reflect changing biodiversity conservation circumstances and requirements. Bhutan also signed the Cartagena Protocol on Biosafety, a CBD supplemental agreement, on August 26, 2002. In compliance with the Cartagena Protocol, a National Biosafety Framework has been designed. Bhutan also signed the freshly drafted Nagoya Protocol on Access and Benefit-sharing on September 20, 2011.

Bhutan, as a UNFCCC Party, presented its Initial National Communication in 2000. For the first time, the country was able to create an inventory of GHG emissions by source and sequestration by sinks, as well as identify climate change risks and mitigation measures, according to the Initial National Communication. The Second National Communication, submitted in 2011, includes an updated GHG inventory, mitigation strategies, climate change vulnerabilities, and a variety of adaptation solutions across multiple development sectors.

In 2006, a National Adaptation Programme of Action for Climate Change (NAPA) was developed, defining, among other things, key projects for climate change adaptation. The Royal Government developed and carried out a number of significant climate change adaptation initiatives based on NAPA, including a huge and lengthy project to reduce climate change-induced hazards and vulnerabilities from glacial lake outburst floods in the Punakha-Wangdi and Chamkhar valleys.⁶⁹

Bhutan also joined the Kyoto Protocol on August 26, 2002, which establishes enforceable targets for industrialised countries and the European Union to reduce GHG emissions. Bhutan hosted the "Climate Summit for a Living Himalayas" in November 2011, agreeing to the UNFCCC principles and provisions. The Summit approved a framework of cooperation aimed at executing regional cooperative activities to increase resilience to climate change in southern watersheds of the Eastern Himalayas in Bangladesh, Bhutan, India, and Nepal. The

⁶⁸ "Bhutan: In Pursuit of Sustainable Development" (NATIONAL REPORT FOR THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, 2012):7,<https://sustainabledevelopment.un.org/content/documents/798bhutanreport.pdf>.

⁶⁹ "Bhutan: In Pursuit of Sustainable Development" (NATIONAL REPORT FOR THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, 2012):7,<https://sustainabledevelopment.un.org/content/documents/798bhutanreport.pdf>

primary areas of collaboration included: guaranteeing energy security and promoting alternative technologies; securing the Himalayan national freshwater systems; ensuring food security and livelihoods; and preserving biodiversity and its sustainable usage.⁷⁰

Bhutan, a member of the UNCCD, developed the National Action Programme (NAP) to prevent land degradation in 2009. For Bhutan, the varied policy and programmatic work performed through the various MEAs platforms provided great opportunity to review, analyse, update, and reinforce national policies, plans, and programmes in pursuit of sustainable development and maximisation of GNH.

Beside the Rio convention, Bhutan has also joined different UN environmental conventions:

- International Plant Protection Convention: It seeks to safeguard both cultivated and wild plants by preventing the spread of pests. Bhutan ratified the Convention on the 20th June, 1994.
- UNESCO World Heritage Convention: It strives to assure the protection and conservation of natural and cultural heritages around the world via international cooperation in research, monitoring, management, and education. On October 22, 2001, Bhutan ratified the Convention. The national focal agency is the National Commission for UNESCO, which is part of the Ministry of Education.
- Basel Convention: Regarding the Control of Transboundary Movement and Disposal of Hazardous Wastes, signed on August 26, 2002. The NEC serves as the national focal agency.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): On August 15, 2002, the agreement was signed. The Wildlife Conservation Division of Forests and Park Services, Ministry of Agriculture and Forests' serves as the national CITES focal agency.
- On August 23, 2004, Bhutan ratified the Vienna Convention for the Protection of the Ozone Layer and its supplementary agreement, the Montreal Protocol on Substances that Deplete the Ozone Layer. The NEC serves as the country's focal agency for the Vienna Convention and the Montreal Protocol.

⁷⁰ *ibid*

- Bhutan joined the International Union for Conservation of Nature (IUCN), the world's first and largest global environmental organisation, in November 2011 and appointed the Ministry of Agriculture and Forests as the focal agency.⁷¹

Climate Change in Bhutan

Climate change is widely acknowledged as one of the most urgent and daunting concerns confronting humanity in the twenty-first century. While the world's poorest countries and people have little to no liability for climate change, they are going to bear the brunt of the social and economic implications. The people and ecology of Bhutan are susceptible to climate change. Although Bhutan is dedicated to a high standard of environmental protection, but the effects of global climate change brought on by emissions from other countries are already being felt there and are likely to continue to be felt.⁷²

There is no doubt that the climate system is warming, and recent data indicates that extreme weather events and changing temperatures are becoming more frequent. The climate with rising monsoon variability in terms of frequency, severity, and timing, patterns are becoming more erratic. Bhutan is known for its significant climatic differences brought on by abrupt changes in topography and altitude across a limited area, therefore this might be terrible for the country. This will make the nation more susceptible to weather and climate change.⁷³

At the 15th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2009 in Copenhagen, Denmark, Bhutan made the commitment to continue being carbon neutral. Bhutan's commitment to maintain its carbon neutrality was also reiterated in the Intended Nationally Determined Contribution (INDC) that was filed in September 2015 in support of the implementation of the Paris Agreement. Given the potential

⁷¹ "Bhutan: In Pursuit of Sustainable Development" (NATIONAL REPORT FOR THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT, 2012):8, <https://sustainabledevelopment.un.org/content/documents/798bhutanreport.pdf>

⁷² "Bhutan National Human Development Report" (Royal Government of Bhutan, 2011):11

⁷³ Ngawang Chhogyel and Lalit Kumar, "Climate Change and Potential Impacts on Agriculture in Bhutan: A Discussion of Pertinent Issues," *Agriculture & Food Security* 7, no. 1 (November 1, 2018):2 <https://doi.org/10.1186/s40066-018-0229-6>.

effects of climate change on Bhutan's mountain ecosystems, the INDC places a strong emphasis on adaptation and mitigation measures.⁷⁴

Bhutan is very vulnerable to a variety of hazards, including cyclone-induced storms, flash floods, landslides, earthquakes, glacial lake outburst floods (GLOF), and droughts due to its precarious geographic location and the consequences of climate variability and change. The main causes of flooding and landslides in Bhutan are seasonal heavy monsoon rains and glacial melt. Flooding is a concern because over 70% of populations, including infrastructure and productive agricultural lands, are situated along major drainage basins.⁷⁵

Scientists studying climate change have cautioned that the melting of the Himalayan ice could portend an unexpected climate catastrophe that could affect the whole community downstream, within our lifetime. As a result of growing human activity, the Himalayan glaciers began to melt decades ago. The region's long-term energy, food, and water security will be impacted by the rate at which it is melting now. The most notable effect of climate change in Bhutan is the creation of supraglacial lakes as a result of glaciers retreating more quickly due to rising temperatures.⁷⁶

Bhutan experiences natural disaster risks, albeit to a lesser extent than other countries, ranking joint 115th out of 191 countries in the INFORM 2019 Risk Index.⁷⁷ The government released a carbon-neutral declaration in December 2010 to demonstrate its readiness to address climate change as a responsible member of the global community. Bhutan vowed to keep its emission levels below its forest sequestration capacity in this unprecedented action, a bold pledge it reinforced when it filed its Intended Nationally Determined Contribution (INDC) in September 2015, ahead of COP21 in Paris.⁷⁸

⁷⁴ "Drivers of Deforestation and Forest Degradation in Bhutan," 2017: 36, <https://static1.squarespace.com/static/58d6cc1e17bffc801edde/t/59ed1fa6e45a7c27e93bc02c/1508712427664/Bhutan+driver+assessment.pdf>

⁷⁵ "National Center for Hydrology and Meteorology," www.nchm.gov.bt, 2018, <https://www.nchm.gov.bt/home/pageMenu/781>.

⁷⁶ P Adhikari, "Climate Change Impact in Bhutan – Bhutan Watch," *The Bhutan Journal*, January 12, 2020:3 <http://www.bhutanwatch.org/climate-change-impact-in-bhutan/>.

⁷⁷ "BHUTAN CLIMATE RISK COUNTRY PROFILE" (Washington, DC: World Bank Group, 2021):13, https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15874-WB_Bhutan%20Country%20Profile-WEB.pdf.

⁷⁸ Doma Tshering and Brianna Craft, "Engaging Effectively in Climate Diplomacy:: Policy Pointers from Bhutan," *International Institute for Environment and Development*, 2016:2

Bhutan is regarded as a carbon-negative or carbon-neutral nation. However, the majority of the emissions from the world's bigger economies are being borne by the nation. The livelihood of the people of Bhutan, biodiversity, and agriculture are beginning to face significant risks due to the effects of climate change. Extreme weather events have been occurring more frequently in Bhutan lately, resulting in widespread devastation to the crops and people's means of subsistence.⁷⁹

Quoting a 51-year-old government official from the Department of Environment and Climate Change *"I am not aware of the term Human Security. We have policies document about environment and whatever sections provisions contain in these documents it eventually talks about the safeguarding of the environment for whom? It eventually comes to human. For e.g. this can be seen from the data from the hospital as there are lesser number of people being affected from asthma, respiratory diseases due to the clean air compared to that of Kathmandu."*⁸⁰

Quoting a 45-year-old respondent from the office of the Department of Environment and Climate Change *"In Bhutan*

Agriculture in Bhutan

Approximately 70% of people in the rural nation of Bhutan rely on agriculture for their living. Though it employs 59.9% of the workforce, only 13.5% of the country's land is currently used for agriculture due to the country's rough terrain, which restricts area expansion.⁸¹ Wetland, which can be used for irrigated farming, makes up just 54,300 acres, or 1%, of Bhutan's whole land area. The country's mountainous geography and strong emphasis on preserving its forest cover mean that there is relatively little room for agricultural land expansion. In addition, agricultural land is gradually disappearing due to land conversion and urbanisation, especially towards the base of fertile valleys.⁸²

⁷⁹ Ngawang Chhogyel and Lalit Kumar, "Climate Change and Potential Impacts on Agriculture in Bhutan: A Discussion of Pertinent Issues," *Agriculture & Food Security* 7, no. 1 (November 1, 2018):7 <https://doi.org/10.1186/s40066-018-0229-6>.

⁸⁰ Interview of the govt official 6th oct 2023

⁸¹ Kinley Dorji, Judith Miller, and Shubiao Wu, "Agricultural Interventions in the Bhutanese Context for Sustainability—a Documentary Analysis Using a Thematic Conceptual Framework," *Sustainability* 15, no. 5 (February 25, 2023): 4177, <https://doi.org/10.3390/su15054177>.

⁸² "Country Environmental Analysis [DRAFT] Asian Development Bank," 2004:21 <https://www.adb.org/sites/default/files/institutional-document/32180/bhu-cea-nov2004.pdf>.

Agriculture is practiced on scattered land plots. Between 2010 and 2020, its share of the GDP increased from 14.78% to 19.23%. Nevertheless, the majority of agricultural activity is still focused on subsistence level.

Climate change, natural catastrophes, decreased farm productivity, conflict, scarcity of water, shortages of labour, inadequate post-harvest management, and hurdles to market accessibility are some of the difficulties thenations' agricultural industry is facing. In addition, significant obstacles to the growth of rural agro-enterprises include lack of affordable credit, fair marketplaces, business development services, and access to technology. Bhutan's agricultural output is already being impacted by the effects of climate change, which include changed water availability, rising day and nighttime temperatures, extreme weather events including cold snaps and massive hailstones, and changes in the agro-ecological zones.⁸³

The Human wildlife Conflicts are a big issue in rural Bhutan. This can be seen by the damage caused by wild animals to the agriculture crops and damage done to the livestock by wild dogs, tigers and leopards. Numerous livestock species and several hundred tonnes of crops go extinct each year. The damage caused to crop by wildlife is a serious problem for agricultural households. In the country, at least 42% of agricultural households have reported destruction from wild animals.⁸⁴

Deforestation

The area most at risk from Climate Change is the Himalaya. There has been a noticeable rise in temperature across the entire region and for Bhutan specifically. Forecasts indicate that some areas may see rises in temperatures of up to three times the world average, which could cause glaciers to retreat and cause drying in the long term. While there will probably be a rise in precipitation overall in the area, the occurrence of rainfall will have significant variations in terms of location and season. Numerous economic sectors, that include forestry, energy, water, and food security in the highlands and downstream, will be impacted by these factors.⁸⁵

⁸³ "Bhutan," Operations, n.d., <https://www.ifad.org/en/web/operations/w/country/bhutan>.

⁸⁴ Ibid: 22

⁸⁵ Robin Sears et al., "Center for International Forestry Research Report Part Title: Forests in Bhutan Report Title: Forest Ecosystem Services and the Pillars of Bhutan's Gross National Happiness," 2017, https://www.jstor.org/stable/pdf/resrep16275.7.pdf?refreqid=fastly-default%3Adc1a3b9d6b3efafd2131d3a6fd341ab9&ab_segments=0%2Fbasic_search_gsv2%2Fcontrol&origin=&initiator=search-results&acceptTC=1.

One of the world's most diversified forest regions, Bhutan's forests are vast, untouched, and only seldom disrupted by human habitations, in contrast to many other Himalayan regions where forests are frequently found in small patches encircled by land. But this does not apply to the eastern and southern foothills, where there is a practice of shifting farming and the density of the population are high. However, a noteworthy characteristic of the entire nation is the high degree of intact forest. Bhutan, with 73% of its land in forests, has fortunately escaped severe deforestation. The amount of forest cover exceeds the minimum coverage goal of 60% set forth policy of the government under the GNH.⁸⁶

It is enshrined in the constitution of Bhutan (2008) the conservation and protection of the natural environment, which mandates the government to ensure that "a minimum of 60% of Bhutan's total land shall be maintained under forest cover for all time in order to conserve the country's natural resources and to prevent degradation of the ecosystem." According to Article 5.1 of the Constitution, "every Bhutanese is a trustee of the Kingdom's natural resources and environment." Bhutan's devotion to environmental conservation has resulted in a number of policies and laws. Bhutan Forest Act (1969) and National Forest Policy (1974) were the first regulations enacted by the government to protect forests.⁸⁷

Nevertheless, commercial resource exploitation, fuelwood cutting, and livestock grazing pose a threat to the forest area in some densely inhabited areas, such as the southern foothills. Fuel wood usage is still high in Bhutan, where firewood supports 90% of household fuel needs and the use of wood per capita is among the highest in the world at 2.4 cubic per person annually. Bhutan promoted the wood trade in the 1960s in an effort to turn its forests into a significant source of income. As a result, the extraction of commercial timber rose from 77,000 cubic metres in 1981 to 235,000 cubic metres in 1986. But the country in early 1980s prioritised environmental preservation over revenue production from the forest.⁸⁸

One of Bhutan's primary priority areas has been the conservation of the environment and biodiversity, as well as the sustainable management of natural resources. However, with the

⁸⁶ David Zurick, "Gross National Happiness and Environmental Status in Bhutan," *Geographical Review* 96, no. 4 (2006): 657–81, https://www.jstor.org/stable/pdf/30034142.pdf?refreqid=fastly-default%3Ae789baf4061f84b2065f332d384238eb&ab_segments=&origin=&initiator=&acceptTC=1.

⁸⁷ AFoCO-EML, "An Overview of Forestry in Bhutan: Current Situation and Challenges," AFoCO, December 20, 2021, <https://afocosec.org/newsroom/news/forestry-news/an-overview-of-forestry-in-bhutan-current-situation-and-challenges/>.

⁸⁸ David Zurick, "Gross National Happiness and Environmental Status in Bhutan," *Geographical Review* 96, no. 4 (2006): 657–81, https://www.jstor.org/stable/pdf/30034142.pdf?refreqid=fastly-default%3Ae789baf4061f84b2065f332d384238eb&ab_segments=&origin=&initiator=&acceptTC=1.

continuous high speed of socioeconomic development combined with the effects of climate change, adhering to the environmental requirements contained in the constitution of safeguarding ecological balances and sustainable development is becoming more difficult.

The risks to natural resources include increased demands on biodiversity and natural resources, forest loss, and land-use modification for diverse purposes, which could contribute to biodiversity and habitat loss. These forces may result in the extinction of globally vulnerable species and other biodiversity resources, causing ecological imbalances. The National Biodiversity Strategic Action Plan for Bhutan, 2014, identifies overexploitation of timber and fuelwood, land-use conversion, forest crimes wildlife poaching, and unsustainable agricultural practises, pollution, invasive species, climate change, human-wildlife conflict, overgrazing, population, waste, and poverty as the major threats to natural resources and biodiversity conservation in Bhutan. Addressing these risks is difficult for a small country like Bhutan, which has limited financial, human, and technological resources.⁸⁹

The allotment of State Reserve Forest Land and the conversion of forests for a variety of purposes such as hydropower projects, agriculture, mining and quarries, and the installation of electricity transmission lines are the primary drivers of deforestation and forest degradation in Bhutan. Forest degradation is believed to have harmed other land uses, affected downstream water quality, and contributed to greenhouse gas emissions.⁹⁰

Bhutan had 2.51 million hectares of forest cover in 2010, covering approximately 65% of its total area. It lost 1.25km² of tree cover in 2022, which equates to 706kt of CO₂ emissions.⁹¹ Over a 15-year period (2000-2015), 64,111 hectares of forest land was lost, while 140,819 ha of forest area was gained. This translates in a total net forest area change of 76,708 ha, or a 5,114 ha yearly increase throughout this time period. Forest conversion to agriculture is responsible for 36,298 hectares of deforestation.⁹²

⁸⁹ AFoCO-EML, "An Overview of Forestry in Bhutan: Current Situation and Challenges," AFoCO, December 20, 2021, <https://afocosec.org/newsroom/news/forestry-news/an-overview-of-forestry-in-bhutan-current-situation-and-challenges/>

⁹⁰ *ibid*

⁹¹ World Resources Institute, "Global Forest Watch," Globalforestwatch.org, 2021, <https://www.globalforestwatch.org/>.

⁹² "Drivers of Deforestation and Forest Degradation in Bhutan," 2017: 18, <https://static1.squarespace.com/static/58d6cc1e17bffcffb801edde/t/59ed1fa6e45a7c27e93bc02c/1508712427664/Bhutan+driver+assessment.pdf>.

In September 2015, Bhutan presented their Intended Nationally Determined Contribution to the UNFCCC. Although they have stayed largely steady, the agriculture sector is responsible for the largest GHG emissions, according to the INDC. Emissions from industries including transportation and industrial operations have increased by 191.6% and 154.3%, respectively, between 2000 and 2013.⁹³

The extreme weather conditions caused by climate change may affect Bhutan's forests, especially during monsoon events that oversaturate soil and cause land slips and flooding by overflowing river channels. Increase in the glacier melt poses a risk of glacial lake outburst floods, that can scour a river valley of its crops, vegetation and build infrastructure.⁹⁴

REDD+ Initiatives

The Reducing Emissions from Deforestation and Forest Degradation (REDD+) policy concept and its favourable incentives for preventing deforestation and forest degradation (D&D) were first introduced over two decades ago. If D&D, forest restoration, and agricultural emissions are not reduced, it will be impossible to meet the ambitious targets of the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). To prove that developing nations have decreased their emissions relative to a national emissions baseline, the UNFCCC has acknowledged the necessity of offering results-based payments (RBPs). Reforestation, afforestation, and agroforestry systems are examples of activities that qualify for the REDD+ process. Other activities include, forest management in a sustainable way, forest carbon stocks conservation and improvement of carbon stock through the plantation of tea and restoration of natural forest. REDD+'s main goal is to incentivize developing nations to mitigate climate change by lowering greenhouse gas emissions (GHG) through stopping, reversing, and slowing down the loss and degradation of forests and by removing GHGs from the atmosphere through the management, conservation, and growth of forests.⁹⁵

⁹³ *ibid*

⁹⁴ Robin Sears et al., "Center for International Forestry Research Report Part Title: Forests in Bhutan Report Title: Forest Ecosystem Services and the Pillars of Bhutan's Gross National Happiness," 2017, https://www.jstor.org/stable/pdf/resrep16275.7.pdf?refreqid=fastly-default%3Adc1a3b9d6b3efafd2131d3a6fd341ab9&ab_segments=0%2Fbasic_search_gsv2%2Fcontrol&origin=&initiator=search-results&acceptTC=1

⁹⁵ Nabin Bhattarai et al., "Are Countries Ready for REDD+ Payments? REDD+ Readiness in Bhutan, India, Myanmar, and Nepal," *Sustainability* 15, no. 7 (January 1, 2023): 6078, <https://doi.org/10.3390/su15076078>.

Bhutan's REDD+ programme was launched in the year 2010 with assistance from the UN-REDD programme. Bhutan has subsequently held a number of national and local REDD+ workshops and awareness programmes. With assistance from the UN-REDD project, Bhutan presented a readiness preparation proposal (R-PP) and feasibility assessment to the Forest Carbon Partnership Facility in 2013. It was due to these initiatives, that the national forest monitoring system action plan was created for REDD+ in accordance with the United Nations Framework Convention on Climate Change's (UNFCCC). The strategy served as an effective building block for Bhutan's national forest monitoring system (NFMS). In 2015, Bhutan carried out its first national forest inventory, producing an inventory report in two volumes. A 2017 study emphasised the problems with D&D as well as the obstacles to the protection, sustainable management, and improvement of forest carbon reserves.

Additionally, based on population and development projections, the study produced estimates of future forest pressure as well as historical patterns. Bhutan also submitted its proposed forest reference levels/ forest reference emissions levels (FRL/FREL) to the UNFCCC as it moves closer to the REDD+ implementation preparedness phase.⁹⁶

Water Resource

Water being Bhutan's one of the most abundant natural resources, it is essential for supporting hydroelectric energy generation, agriculture, and tourism. It also falls under the most vulnerable sectors of the country. The water resources in Bhutan comprises of glaciers, glacial and high-altitude wetlands, rivers and river basins, and ground water reservoirs. Despite the abundance of water resources (70,576 million cubic metres per year), access to them for drinking and agriculture is challenging due to the country's rugged terrain. The majority of Bhutan's water resources flow through small streams and rivers located at the foot of gorges and ravines, whereas human settlements and farming are located on the upper slopes and hilltops. Due to a rise in industrial, agricultural, domestic uses and animal husbandry usage as well as rapid population expansion in urban and rural areas, water resources are under greater stress. However, the biggest concern in the decades to come will probably be climate change brought on by global warming.⁹⁷

⁹⁶ *ibid*

⁹⁷ Asian Development Bank, "Water: Securing Bhutan's Future," 2016:75, <https://www.adb.org/sites/default/files/publication/190540/water-bhutan-future.pdf>.

The first indications of this are already apparent, with streams drying up in a number of places. Many towns and population hubs are reporting water shortages. The uncertainty around the availability of sufficient water is one reason why farming communities are re-evaluating their reliance on agriculture. The heavily monsoon supplied river system of Bhutan already runs low during the dry season, but as a result of climate change aggravating unpredictability, the river may show even more severe flows in the future, with monsoon-season floods turning to mere trickles in dry season. Issues about water pollution are growing as a result of increased urbanisation and growing population in cities, which is also harming the quality of the water.⁹⁸

Bhutan's traditionally rural environment is changing due to urbanisation, improved connection between centres of population, and the development of linear infrastructure to support the expansion of the country's main economic sectors: small-scale industries, tourism, hydropower, and agriculture. While the citizens of Bhutan will benefit from increased prosperity and disposable income as a result of this ongoing development, there are also major medium- and long-term hazards and problems, particularly with regard to Bhutan's most valuable natural resource: its rivers. There are certain threats to Bhutan's water system that cannot be avoided, regardless of any economic sector Bhutan decides to focus on for its future development.⁹⁹

Quoting a 45-year-old government official from the water department *“The department of water is the new formed department. They are coming up with two different water projects one is in Paro and the other one in Tsirang district. Three irrigation schemes in Dagana. As there is no water problem in Thimphu but there are other small villages which faces water problems”*¹⁰⁰

Hydropower in Bhutan

Bhutan has abundant hydropower development potential. The majority of the schemes are run off river system, that was found to be environmentally beneficial and techno-economically least expensive. A small number of reservoir projects that have little or no effect on the environment have also been identified in the Southern Belt prior to the Bhutanese rivers

⁹⁸ “Water in the Bhutan’s Economy Importance to Partners,” 2016, https://wwfasia.awsassets.panda.org/downloads/water_in_the_economies_policy_brief_for_development_partners_2.pdf.

⁹⁹ Ibid

¹⁰⁰ Interview of the government official 6th oct 2023

flowing out and entering the Indian plains. With an estimated 30,000 MW of hydropower potential and a mean annual energy generation of 120 terawatt hours TWh, Bhutan has an average development potential of 781 kW per square kilometre of land (catchment). 23,760 MW have been found and deemed technically feasible thus far. So far, just 1.6% of the potential has been utilised.¹⁰¹

Bhutan's amicable and strong relations with its neighbour India have made it possible for the country to harness its hydropower resources. India has been Bhutan's main source of financial and technical support for the development of its many hydropower projects. Both nations have benefited from the partnership that has grown in the hydropower industry. Bhutan has a significant hydropower potential, while India suffers from a severe electricity shortage.¹⁰²

Firewood has long been Bhutan's main energy source since it can be found in large quantities in the vast forests of the nation. Even with the increase in the usage of commercial fuels, firewood still accounts for a staggering 75% of the nation's energy use. Including non-commercial energy, per capita usage equals about 0.8 tonnes of oil equivalent. The requirement for petroleum products like petrol, Kerosene, LPG and diesel oil is completely met by imports because Bhutan is believed to have no natural gas or oil reserves.

In the energy industry in particular and the economy as a whole, hydroelectric power is quickly taking the lead. The average yearly precipitation in Bhutan is between 500 and 5,000 millimetres. The country's hilly terrain directs runoff via a number of valleys making themselves lend to small, medium, and big run of the river. Reservoir plans with dam structures have also shown to be feasible in certain areas. Due to the region's ready and essentially insatiable market, hydropower is being considered as clean and a sustainable source of income for Bhutan, which could support other areas of its growth and preservation agendas.¹⁰³

Glacial lake Outburst Floods (GLOFs) can be disastrous in a nation where over 80% of people live in river basins, 60% of the population depends on agriculture, and the entire river system is supplied by glaciers. Moreover, hydropower, the nation's main source of income, is also under risk due to GLOFs. Accounting for approx 3000 lakes, 24 lakes in Bhutan could

¹⁰¹ Mr Sonam, Tshering Tamang, and Thimphu Bhutan, "Hydropower -Key to Sustainable, Socio-Economic Development of Bhutan," n.d.:1
https://www.un.org/esa/sustdev/sdissues/energy/op/hydro_tsheringbhutan.pdf.

¹⁰² Ibid:2

¹⁰³ "Bhutan State of the Environment 2001" (United Nations Environment Programme, 2001):15

overflow their banks sooner than anticipated as a result of the glaciers melting more quickly than predicted, which could result in GLOFs.¹⁰⁴

The COVID-19 pandemic has elevated the topic of data analytics to the top of the international agenda, which could encourage nations to increase their investments in and policies around data and technology. For Bhutan, this could entail creating the necessary resources to generate real time climate and high-quality historical data. This is crucial because, with no historical data on flood frequencies, for example, has hampered the construction of affordable flood protection measures.¹⁰⁵

Quoting a 50-year-old official from the water department “*we in Bhutan prioritise environment and we make sure that the development project does not affect the environment in the long run, therefore, even in the construction of hydro power plants we construct the hydropower plant here next to the river and all they do is they dam there and the water level rises and it just flows insides which is called run off scheme. As per the water Act of 2011 they have to maintain the minimum environment flow left in the water course*”¹⁰⁶

Natural Disasters

The problems posed by natural and man-made disasters, such as landslides, floods, earthquakes, glacial lake outburst floods, and forest fires, are becoming more frequent in Bhutan. Climate change is making the country's disaster risk environment more complicated, which increases the country's susceptibility to these risks. A growing number of people, possessions, and means of subsistence are put at increased risk as a result, and this could have cascade effects on many Bhutanese societal groups.¹⁰⁷

Despite the fact that many of these catastrophes are unavoidable, we may minimise the harm they inflict if we are vigilant and well-prepared. Increasing the durability of both new and old buildings particularly the abode and concrete reinforced structures in the Western area of Bhutan is one approach to do this. At present, houses that do not adhere to earthquake-

¹⁰⁴ Thinley Choden and Namgay Choden, “3 Climate Threats That Can Become Opportunities for Bhutan,” World Economic Forum, September 4, 2020, <https://www.weforum.org/agenda/2020/09/climate-threats-and-opportunities-for-the-kingdom-of-bhutan/>.

¹⁰⁵ *ibid*

¹⁰⁶ Interview of the government official 6th oct 2023

¹⁰⁷ “Bhutan Is Strengthening Resilience of Infrastructure to Disasters | UNDRR,” www.undrr.org, January 16, 2024, <https://www.undrr.org/news/bhutan-protecting-its-vital-infrastructure-systems-strengthening-resilience-disasters>.

resilient building rules might not withstand in the event of even a little earthquake. As a matter of fact, during an earthquake, adobe buildings are susceptible to three times the damage and higher casualty.¹⁰⁸

Women Participation

When it comes to their interactions with the environment, men and women differ in many ways. For example, data also suggests that the effects of climate change are gender-specific, data on employment suggests that women depend on natural resources much more than men, and there is a wealth of literature on the disproportionate obstacles women face in obtaining property, the absence of it may hinder their ability to deal with disasters. The data pertaining to the presence of women in government bodies indicates that they are not adequately represented in environmental decision-making, hence restricting their ability to influence environmental policy.¹⁰⁹

Though Bhutan have given women substantial rights, but the country's gender equality status provides a mixed image. During the course of time, significant advancements have been made for girls and women, including gender equality in education (up to the secondary level), a decline in maternal mortality, and a rise in the number of women engaged with society and the workforce. Even though Bhutan has ratified numerous international treaties and agreements on gender conventions and has equal rights established in the Constitution and other laws and regulations, gender inequality still exists in some areas.¹¹⁰

People are affected by climate change in numerous ways, a Sanitation Baseline Survey SNV of 2022 discovered that Bhutanese women are most negatively impacted. 71% of women are in charge of unpaid domestic care tasks, such as Water Sanitation and Hygiene (WASH) and household water duties, while they are underrepresented in platforms where decisions are made. With their local knowledge and experience, not only are women on the

¹⁰⁸ Bhutan's Daily Newspaper, "Is Bhutan Prepared for an Earthquake?," Kuensel Online, September 4, 2021, <https://kuenselonline.com/is-bhutan-prepared-for-an-earthquake/>.

¹⁰⁹ Sara Duerto Valero, Sneha Kaul, and Tsz Yu Chang, "WOMEN and the ENVIRONMENT an Asia-Pacific Snapshot," n.d., https://data.unwomen.org/sites/default/files/documents/Publications/APRO_Women-environment-snapshot.pdf.

¹¹⁰ "Gender and Climate Change in Bhutan " (Bhutan: National Commission of Women and Children, February 2020):8

front lines of climate change response but also have the ability to improve community resilience.¹¹¹

Influence of India and China on Bhutan

With the opening of India's special office in Thimphu in 1968, diplomatic ties were established between India and Bhutan. The 1949 Treaty of Friendship and Cooperation, the Indian government agreed not to meddle in Bhutan's domestic affairs, as stated in Article 2 of the treaty. With respect to its external relations, the Bhutanese government consents to follow the guidance of Indian government. The treaty was updated in February 2007, serves as the cornerstone of bilateral relations between India and Bhutan. In 2018, India and Bhutan commemorated the Golden Jubilee for the formation of formal diplomatic relations.

When Bhutan launched its 1st five-year plan in the year 1960s since then the Indian government has supported the socio-economic development of Bhutan. It still holds to be one of the major development partners of Bhutan. India's 4500 cr. contribution will make up 73% of Bhutan's total foreign grant component for the 12th Five Year Plan. Development of, ICT, agriculture, health, irrigation, industrial development, energy, road transport, civil aviation, human resource expansion, capacity building, education, scholarship and culture are among the main areas on which GOI focuses its funding.¹¹²

Bhutan's hydropower projects are an example of win-win collaboration; they give India a consistent supply of affordable, clean electricity, generating Bhutan's export earnings, and strengthen our economic ties. Three Hydroelectric Projects (HEPs) totalling 1416 MW have been built in Bhutan thus far by the Government of India (60 MW Kurichhu HEP, 336 MW Chukha HEP and 1020 MW Tala HEP). These HEPs are currently operating and export excess power to India. Roughly three-fourth of the power produced is exported, with the remaining portion being used for domestic purposes.¹¹³

The inter-governmental agreement between India and Bhutan was signed in the year 2014 April under joint venture model for construction of four additional HEP's with a combined

¹¹¹ "Building an Equitable Future: Women, Water, and Climate Resilience in Rural Bhutan," www.waterforwomenfund.org, March 6, 2024, <https://www.waterforwomenfund.org/en/news/building-an-equitable-future-women-water-and-climate-resilience-in-rural-bhutan.aspx>.

¹¹² https://www.mea.gov.in/Portal/ForeignRelation/Bhutan_May_2018.pdf.

¹¹³ *ibid*

capacity of 2120 MW: (180 MW Bunakha, 770 MW Chamkharchhu, 600 MW Kholongchhu and 570 MW Wangchhu.) In these initiatives, the joint venture partners will each control 50 percent of the joint venture company. The joint venture partners would share the equity evenly, with a debt-to-equity ratio of 70:30.¹¹⁴

India has transitioned from the original 60:40 model, which was composed of 60% grants and 40% loans, to a 30:70 model, which consists of 30% grants and 70% loans. Due to this adjustment, Bhutan now has a significant debt load and is increasingly dependent on India for its economic needs. However, a large amount of Bhutan's hydropower roughly one-fourth of the nation's GDP has been exported to India.¹¹⁵

In a meeting with Jigme Khesar Namgyel Wangchuck, the visiting King of Bhutan, on November 6, Prime Minister Narendra Modi reaffirmed India's unflinching support for the country's socioeconomic growth, emphasizing that is is in line with the Himalayan nation's priorities. Additionally, both countries decided to strengthen their economic, infrastructure, and energy sector relations as well as their cross-border connectivity. Following their bilateral discussions, Modi and Wangchuck released a joint statement announcing that both countries have agreed on the final spot for the survey for the planned cross-border railway connection between Gelephu in Bhutan and Kokrajhar in Assam. They also decided to investigate the feasibility of building a train connection between Samtse (Bhutan) and Banarhat (West Bengal).¹¹⁶

But neither party stated whether they had talked about the boundary dispute between China, India, and Bhutan. Following the conclusion of the 25th round of boundary negotiations between Bhutan and China in Beijing, where both countries signed a cooperation agreement on the "Responsibilities and Functions of the Joint Technical Team on the Delimitation and Demarcation of the Bhutan-China Boundary."¹¹⁷

¹¹⁴ *ibid*

¹¹⁵ Sun Xihui, "How India Tries to Interfere in and Take Control of Bhutan - Global Times," www.globaltimes.cn, March 14, 2023, <https://www.globaltimes.cn/page/202303/1287280.shtml>

¹¹⁶ Pradip R Sagar, "Why Bhutan-India Relations Are Significant amidst the Growing Influence of China," *India Today*, November 7, 2023, <https://www.indiatoday.in/india-today-insight/story/why-bhutan-india-relations-are-significant-amidst-the-growing-influence-of-china-2459651-2023-11-07>.

¹¹⁷ *ibid*

India is Bhutan's main trading partner and only avenue for transit trade. India now uses commercial and economic ties as a major tool to influence Bhutan's policy because China and Bhutan do not have diplomatic ties. Bhutanese products were allowed to travel duty-free to third countries under the terms of the 1972 India-Bhutan Agreement on Trade, Commerce, and travel. Since then, the agreement has undergone five revisions, creating a framework of free commerce between the two nations.¹¹⁸

India is in charge of Bhutan's economic and security lifelines, giving it the ability to meddle in both domestic and international matters. This underlines India's regional hegemony in its approach to Bhutan. India interfered in the Bhutanese election process in order to keep a pro-China party from winning. In Bhutan's second-ever parliamentary election, held on July 13, 2013, the opposition People's Democratic Party (PDP) defeated the incumbent Druk Phuensum Tshogpa (DPT) party by an unexpected margin.

But a month and a half prior, the ruling party which was regarded as favourable to China had a commanding advantage in the first round of voting. This surprising outcome can be attributed to India's use of "economic assistance" as a means of election meddling in Bhutan shortly before voting. India abruptly stated that it would no longer be providing Bhutan with discounted gas and kerosene, and that it would no longer be paying price subsidies for imported electricity from Bhutan's Chukha hydroelectric power plant.

India uses a variety of strategies to influence the foreign policy of Bhutan. On the one side, Bhutan's ability to develop diplomatic ties with other nations is restricted by India. India continues to be extremely watchful over Bhutan's expansion of its foreign relations as well as hinders Bhutan's interactions with other countries, despite India's repeated declaration of Bhutan as an independent sovereign nation.¹¹⁹

Conversely, New Delhi meddles in the border talks between China and Bhutan. China has negotiated solutions to most of its land border disputes since the 1950s, but its border talks

¹¹⁸ Sun Xihui, "How India Tries to Interfere in and Take Control of Bhutan - Global Times," www.globaltimes.cn, March 14, 2023, <https://www.globaltimes.cn/page/202303/1287280.shtml>.

¹¹⁹ *ibid*

with Bhutan remains incomplete as India wants to represent Bhutan in the negotiations whilst China wants to deal directly with Bhutan.¹²⁰

Around the time of the Doklam conflict in 2017, China started building a road on its own without consulting Bhutan, which asked India for assistance. The 73-day military siege was ultimately lifted. China considers India to be a hindrance to its goals. The Chinese started building 'well-off society' villages at Gyalaphug (on the Doklam Plateau) and numerous other locations that Bhutan claimed in 2015 in an effort to put additional pressure on Bhutan. Furthermore, China began to claim the 650sqkm of the Sakteng Wildlife Sanctuary in the Trashigang area of eastern Bhutan in June 2020. Thimphu fears that China's military may use these to get into Bhutan and send Chinese migrants to aid in efforts to dominate the region.¹²¹

China is making another covert move in the economic sphere. Historically, India has been Bhutan's largest aid and economic partner. But over the past few years, China has overtaken India and is now a contributor to more than 25% of Bhutan's trade.

Both the Punatshangchu and Chukha hydropower projects are being worked on by the Power Construction Corporation of China. Several infrastructure projects in Bhutan are being undertaken by Sinohydro Corporation, China Road and Bridge Corporation, China Gezhouba and other Chinese State-owned companies. As for railway connectivity via the Lhasa-Gyantse route, China Railway Eryuan Engineering Group Co. is investigating it.

Along with mining gold and copper, Chinese Party-State enterprises also constructed the Friendship Highway of 220km in 2008, Lateral Road of 290km in 2013, Gelephu-Gomtu Road of 100km in 2016, and the Wangdue-Trongsa of 60km Road in 2017. Furthermore, China controls Bhutan's vital telecom industry, installing fibre optic connections, growing mobile networks, and setting up access points for internet. Since 2009, Huawei has operated 3G and 4G telecommunication networks in Bhutan.¹²²

Thus, Bhutan is under intense pressure from China to forge diplomatic ties. The resolution in the territorial dispute can be seen as a step to that direction, but China's oppressive behaviour towards New Delhi and Thimphu may cause the process to stall for the time being. China

¹²⁰ *ibid*

¹²¹ Srikanth Kondapalli, "Bhutan under China's Shadow," Deccan Herald, December 2, 2023, <https://www.deccanherald.com/opinion/bhutan-under-chinas-shadow-2794475>.

¹²² *ibid*

aims significant and strategic gains in the western sector, which are intended to challenge and weaken India, while its concessions to Bhutan's territory are tactical and nominal in the central region.¹²³

Conclusion

This chapter deals with the issues of Human Security in Bhutan and the environment challenges in the nation. The term Human Security is not mentioned in any policies of the Bhutan Government. Instead, they have a philosophy called Gross National Happiness (GNH), which discourse started in the early 1970s, but the general happiness in governance is belief to have existed in the early 17th century. The 1729 legal code of Bhutan states that that said if the government cannot create happiness for people there is no purpose for the government to exist which meant that the government is responsible for creating a necessary condition for human to pursue happiness. Therefore, in the mid 2000 they started coming up with indicators, constructing GNH index and running survey and trying to find out how people are actually doing across the nine dimensions and domains which are mentioned in the GNH.

The four parameters that were taken for the study were Climate Change, Agriculture, Deforestation and Hydropower. With these specific parameters the study was carried forward to understand the environment challenges in the country.

Bhutan has been facing different environmental challenges even though having kept the environment in the priority list of any of their policy formulation. The most significant of which are thought to be the effects of climate change. Impacts of climate change brought on by global warming are already apparent and are probably going to get worse soon. Bhutan's agriculture has been exposed to vulnerability in recent severe weather events, including more frequent wind and hailstorms, unpredictable rains, floods caused by glacier outbursts, and the emergence of new pests and diseases.

Rural-urban migration has also been one issue which can be attributed to excessive urbanisation and the growth of cities, as well as employment opportunity in urban areas. Migration from rural areas is expected to reduce pressure on agricultural land, but impose a severe strain on the already inadequate urban services and pose serious developmental and

¹²³ ibid

environmental problems. Some such problems are shortage of safe drinking water and electricity, inadequate hygiene, lack of sewage facilities, unemployment.

Hydropower construction in Bhutan has been done in a way that it does not affect the natural environment. Bhutan has managed quite well in this sector. The construction has been made in such a way that it does not drain the water bodies. It is called the run off river system. The impact on the environment is during the construction phase but once it is operationalized it does not have impact at all. The local people have been benefitted from the construction of the hydropower projects.

There are different policies that Bhutan and Nepal have adopted in regard to safeguarding of environment which we will be discussing in detail in the next chapter. The government of Bhutan has followed the sustainable development path as they also have to evolve along with the rest of the world. They will be following the 'middle path' which is also mentioned in the National Environment Strategic Document 1998 where not only will they focus too much on environment nor the focus will be on development but benefit from both and move ahead.

The Himalayan Kingdom are facing a number of alarming problems that could endanger their very existence in the near future.

Chapter V

Comparative Study of Policy Responses to Environmental Security in Nepal and Bhutan

Introduction

Nepal and Bhutan the two landlocked SAARC member countries sandwiched between the two giants India and China with significant geopolitical importance. Although Nepal and Bhutan enjoy excellent religious, cultural, and political relations, currently there appears to be some unease in their diplomatic ties because of the issue of Bhutanese citizens of Nepali descent who have been exiled from Bhutan and are taking refuge in the districts of Jhapa and Morang in Nepal.¹

In December 1985, the South Asian Association for Regional Cooperation, or SAARC, was established, bringing the countries of South Asia together. Their proximity and rich shared history together made them aware of the countries' entitlement to borderless communication and overall socioeconomic interdependence. The two nations possess significant hydropower potential and have the capacity to become an energy powerhouse in the region. Both nations are founding members of the South Asian Association for Regional Cooperation (SAARC) and members of the Non-Aligned Movement (NAM). Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) was joined by the two nations in 2004. It was not until the early 1990s that Bhutan made the shift to some form of democracy, despite Nepal having been experimenting with democratic rule since the 1950s. A significant number of people of Nepali descent reside in Bhutan; migratory records go all the way back to the early 17th century²

The diplomatic relations between the two countries was established in the year 1983. Both the countries strive to advance the interests of Least Developed Countries (LDCs) and Landlocked Developing Countries LLDCs. Bhutan gave up its status as a Least Developed Country on December 2023 and joined the group of developing middle-income economies.³

¹ Suman Dhakal, "Nepal Bhutan Relations (a Study of Its Past) ," *ANCIENT NEPAL Journal of the Department of Archaeology the Department of Archaeology* 152 (March 2003):1
http://www.doa.gov.np/downloadfile/ancient_nepal_152_full_1498631438_1593684396.pdf.

² John Narayan Parajuli, "Jumpstarting Nepal-Bhutan Relationship ," *The Bhutan Journal*, January 12, 2020,
<http://www.bhutanwatch.org/jumpstarting-nepal-bhutan-relationship/>.

³ Sneha M, "Bhutan's Graduation from LDC: Opportunities and Challenges," *Manohar Parrikar Institute for Defence Studies and Analyses*, January 11, 2024, <https://www.idsa.in/idsacomments/Bhutan-Graduation-from-LDC>.

Whereas Nepal is in the process of graduating from LDC to Developing Country, it is likely to be effective on 2026.⁴

In May 1996, the SAARC Council of Ministers recommended for the establishment of an economic framework within a sub-region encompassing Bhutan, Nepal, India, and Bangladesh known as the South Asian Growth Quadrangle (SAGQ) for faster economic development.⁵ Officially, the SAARC Charter did not really create the idea of BBIN or SAGQ sub-regional cooperation. Only at the 9th Summit in Male, 1997 did the member nations decide to undertake specific projects pertaining to the unique needs of four countries.

The four countries' transport ministers jointly announced on June 15, 2015, that “we admit the methodological and facilitating role played by the ADB in enchanting the BBIN-MVA process this remote and request ADB to endure as long as the much needed technical support and other related measures necessary to ensure the active and effectual application of work plan”.⁶

Signed on June 15, 2015, during the BBIN Transportation Minister's meeting in Thimpu, Bhutan, the Motor Vehicle Agreement (MVA) aims to control personnel, cargo vehicular traffic, and passenger movement between the BBIN countries. Encouraging unhindered goods movement across borders has been considered. As a result, trade transportation costs are likely to be significantly reduced, and this will serve as an important tool for assessing trade and investment opportunities. This will also create new economic opportunities, especially in the border regions. BBIN will also support the creation of jobs and electricity purchases in order to further promote sustainable development. In addition to providing a charter for the eagerly awaited push for the sub-region's ultimate economic integration, the Agreement has wisely taken advantage of the political leverage currently available for sub-regional integration.⁷

The Indian government showed the essential political will to bring the BBIN concept to reality, and Bangladesh, Bhutan, and Nepal, as predicted, were all pleased and showed no

⁴ Arhan Sthapit, “Nepal’s Graduation from Least Developed Country to Developing Country by 2026: Challenges for Handicraft Sector MSMEs,” *SSRN Electronic Journal*, June 21, 2022: 3-4
<https://doi.org/10.2139/ssrn.4152739>.

⁵ Mahamudul Hassan, “PROSPECT and so FAR DEVELOPMENT of BBIN CONNECTIVITY,” *International Journal of Social, Political and Economic Research* 3, no. 1 (April 4, 2016): 15–29,
<https://doi.org/10.46291/ijospervol3iss1pp15-29>.

⁶ Ibid pp 18

⁷ Ibid pp 19

signs of hesitation. It shows that the neighbours to India's east are prepared to adopt a more logical strategy for regional integration and place a high value on economics and trade when dealing with one another. All four of the participating countries stand to gain from the BBIN MVA, but Nepal and Bhutan, the landlocked Himalayan nations, will also gain extra advantage since they will have access to a different transit route. While the transit routes are still being finalised, it is anticipated that the BBIN will assist Nepal and Bhutan in gaining access to sea ports Chittagong and Mongla of Bangladesh⁸

A blow to the BBIN project came in 2017 when Bhutan decided to pull out of it for a while after the MVA failed to receive parliamentary approval. Bhutan's complaints are related to environmental issues and sustainability. Prime Minister Lotay Tshering stated in 2020 that Bhutan would not be able to consider joining the MVA due to its "current infrastructure" and high importance of continuing to be a "carbon-negative" nation. Thus, the plan was not approved by the Bhutanese parliament.⁹

The long-awaited Motor Vehicles Agreement (BBIN-MVA) between Bangladesh, Bhutan, India, and Nepal finally made progress on March 7-8, 2022, when the participating nations came together to fulfil one of South Asia's long-standing connectivity goals. Each nation was well-represented at the conference, which took place in New Delhi, in order to reach an acceptable conclusion for a Memorandum of Understanding (MoU) and expedite the BBIN MVA's awaiting ratification. A very important matter, which had been signed on June 15, 2015, was brought up during the meeting: the start of smooth passenger and cargo protocols for the control of passenger, personal, and cargo vehicular traffic between the four respective countries. This point should be made clear: Bhutan only participated in the discussion as an observer. The nation had earlier chosen not to join the accord due to concerns about its own environmental conservation, which it believed the project would jeopardise. Even now, the Himalayan kingdom's decision to participate in the process or to opt out will have an intrinsic impact on it and deprive the nation of potential reciprocal developmental gains. It appears that the nation is still unable to provide its approval, which makes the procedure difficult.¹⁰

⁸ Amit Kumar, "BBIN MVA: Embracing Sub-Regionalism in South Asia," 2015, pp2 https://www.icwa.in/showfile.php?lang=1&level=3&ls_id=496&lid=471.

⁹ "BBIN Motor Vehicles Agreement," Drishti IAS, March 10, 2022, <https://www.drishtiiias.com/daily-news-analysis/bbin-motor-vehicles-agreement>.

¹⁰ "A Resurrection of the BBIN MVA," orfonline.org, March 22, 2022, <https://www.orfonline.org/expert-speak/a-resurrection-of-the-bbin-mva>.

It has thus been clear that Bhutan has prioritised environment and has taken a significant initiative by being reluctant to join the BBIN. Whereas, Nepal on the other hand has prioritised development of a country with environment concerns being the secondary.

In the year 2014 both Nepal and Bhutan formed new parliamentary governments. Strong revenue growths have been seen at the government level. After reaching US\$19.29 billion in 2013, Nepal's GDP increased by 5.2% in the fiscal year (FY) 2014, which concluded in July, according to estimates from the Asian Development Bank. Even while it appears that the economy is doing well, efficient delivery of services and the achievement of development goals have not always followed, as actual spending by government has been slow, especially on infrastructure. Remittances from outside are a major source of income for Nepal, as millions of workers are spending their economically productive years away from country. Many labourers from Nepal come through unofficial networks and middlemen, making them susceptible to exploitation.¹¹

The People's Democratic Party government of Bhutan implemented austerity measures in response to a budget crisis in the year 2013, however this attempt was corrupted by members of Parliament (MPs) providing themselves increase in the salary and other benefits. To cover the deficit, the government had to change tax regulations, enact new taxes, and issue Treasury bills. The divisive Pedestrian Day (No-Vehicle Day) it had been replaced with the equally unpopular green tax on petrol and the encouragement of electric cars. Even if the previous Druk Phuensum Tshogpa (DPT) government had overspent, it also left the country with 94.8% coverage on health, literacy rate to 63%, availability of adequate water for drinking to 94%, and electricity coverage to 98.14%. In addition, there was a 20% GDP trade deficit, debt-to-GDP ratio to 107%, inflation was 8%, unemployment 2.9%, youth unemployment 9.6%, and crisis on a rupee.¹²

Refugees and issue of Human Rights

In terms of refugees per person, Bhutan is the world's largest producer. In the 1990s, Bhutan eliminated the Lhotshampa, an ethnic group whose origins can be traced in Nepal which accounted for one-sixth of the population of Bhutan, in a single move to protect its distinct national identity. Twenty years later, thousands of people are still trapped in their

¹¹ Monica Den Boer and Jaap De Wilde, *The Viability of Human Security* (Amsterdam: Amsterdam University Press, 2008).

¹² *ibid*

own country and living in camps in Nepal. The Lhotshampas were driven out gradually. The Citizenship Acts of Bhutan from 1958 and 1985 compounded the problem for the community. Since 1958 was the year that many Lhotshampa received citizenship, it was thereafter designated as the "cut off" point. Residents were considered illegal immigrants if they could not provide documentation proving they had lived in Bhutan before to 1958. Human rights organisations claim that even people who could provide the necessary documentation were frequently kicked off.¹³

The Bhutanese government did not contribute to fostering a favourable political environment prior to the expulsion. The government imposed linguistic and cultural limitations on the Lhotshampa under the "One Nation, One People" policy. For example, Dzongkha was used in place of Nepali in classrooms, and all people were required to adhere to the Driglam Namzha's national dress code. Nepalis were angry at being made to wear the Ngalop majority's traditional attire rather than their own. One human rights assessment claims that the Bhutanese severely suppressed political activity and reform initiatives in the 1990s. The demand for human rights and democracy was branded as an anti-national movement and 'acts of treason'.¹⁴

Even after the country democratically shifted administrations in 2008, the new authority persisted in systemic discrimination against the Lhotshampa community, even stepping up anti-Lhotshampa measures. Although the Lhotshampa are not as overtly persecuted as they experienced in the beginning of the 1990s, they are nevertheless subject to a great deal of discrimination in the country that has been their family' home for many generations. Bhutan has only ratified two of the many treaties that are now in place to uphold and defend human rights. As a result of the significant number of children among the Lhotshampa refugees who are being persecuted, many in the international world contend that Bhutan has breached the Convention on the Rights of the Child (CRC), which Bhutan signed in 1990.¹⁵

The problem of Bhutanese refugees continues to pose a threat to the warm and cordial ties that have long existed between the two nations. The Lhotshampas have migrated out of Bhutan in large numbers since 1990, crossing the Indian territory and requesting shelter in

¹³ Maximillian Mørch, "Bhutan's Dark Secret: The Lhotshampa Expulsion," *The Diplomat.com*, September 21, 2016, <https://thediplomat.com/2016/09/bhutans-dark-secret-the-lhotshampa-expulsion/>.

¹⁴ *Ibid*

¹⁵ Maya Crocker, "Bhutan: Persecution in Paradise – UAB Institute for Human Rights Blog," *sites.uab.edu*, October 18, 2021, <https://sites.uab.edu/humanrights/2021/10/18/bhutan-persecution-in-paradise/>.

eastern Nepal. Ever since, Nepal has endeavoured to employ all feasible means of resolving this humanitarian issue in a nonviolent manner, enabling the refugees to return home with respect and honour.

In 1993, a Joint Ministerial Committee (JMC) was established between Nepal and Bhutan, initially at the level of Home Ministers, to address the issue of Bhutanese refugees residing in different camps in Nepal's eastern region. Subsequently, the foreign ministers of the two nations presided over the committee. The JMC convened fifteen times until 2003, at which point it was unable to hold any more meetings. However, Nepal has been pleading with Bhutan to restore the committee back and start talks again so that the refugees from Bhutan can return home with dignity.¹⁶

Over time, the Royal Government of Bhutan RGoB's insistence that the refugees staying in camps weren't Bhutanese and has given way to a more nuanced assertion that they were a group of impoverished Nepalese from various regions of Nepal and India who were confined in camps in order to get international support and recognition. Nepal claimed that the refugees were Bhutanese and that Bhutan fulfilled its responsibilities by returning and reintegrating willing refugees into the Bhutanese community. India persisted in arguing that the two Himalayan neighbours should work together to find a bilateral solution to the refugee problem.¹⁷

The host communities may experience both positive and negative outcomes from refugee inflows. Locals and refugees may face competition for jobs, natural resources, and services. They might also produce new resources in the form of financial resources, human capital, and foreign aid. Local attitudes toward the refugee community in Nepal vary from reluctant acceptance that immigrants strengthen the local economy to dissatisfaction over the depletion of local firewood, which resulted in a conflict in February 2007 that claimed the life of one refugee.¹⁸

To address the many development needs in developing nations, the Japanese government launched "Grant Assistance for Grassroots Human Security Projects (GGP)" in 1989. Since

¹⁶ Eyasin Khan, "Lhotshampas Refugees: Implications on Nepal-Bhutan Relations," *Anudhyan: An International Journal of Social Sciences*, n.d.

¹⁷ Eyasin Khan, "Lhotshampas Refugees: Implications on Nepal-Bhutan Relations," *Anudhyan: An International Journal of Social Sciences*, n.d.

¹⁸ Susan Banki, "Bhutanese Refugees in Nepal: Anticipating the Impact of Resettlement Briefing Paper," 2008, <https://ses.library.usyd.edu.au/bitstream/handle/2123/20992/44434%20Griffith%20Nepal%20New.pdf>.

its inception in Nepal in 1991, the GGP plan has provided funding for more than 200 initiatives spanning a range of sectors, including social welfare, health, and education. GGP directly aids in the socioeconomic development of communities by helping people at the local level.¹⁹

Since 1989, the Grant Assistance for Grassroots Human Security Projects (GGHSP) known as "KUSANONE" has been part of Official Development Assistance (ODA) to developing countries. In Japan, the plan is known as "KUSANONE". In Japanese "KUSANONE" means grassroot.²⁰

Establishing democracy, stability, and prosperity in Nepal, since it has historically maintained cordial connections with Japan, is crucial for the stability of the Southwest Asia region, which is also economically and politically significant to Japan. Japan helped Nepal "Build Back Better" following the devastating earthquake that struck the nation in 2015. By October 2022, hospitals, bridges, and other public infrastructure projects had been finished with Japan's help, along with about 85,000 homes and 270 schools overall. Additionally, Japan offers a variety of technical assistance aimed at enhancing the government's capacity to mitigate catastrophe risk and encouraging the use of buildings complying construction standards. Additionally, in 2022, Japan funded two grant aid projects which involved the restoration of irrigation facilities and two yen loan projects along with the support for resilience and economic growth.²¹

The development assistance provided by Japan to Bhutan has produced consistent outcomes, particularly in the areas of increased agricultural yield, the construction of economic infrastructure, including roads and bridges, and the development of human resources. With the goal of improving the diagnosis and treatment of dangerous infectious diseases as well as appropriately preventing the spread of infections, Japan granted grant aid for the construction of the Royal Centre for Infectious Diseases in 2022 and the procurement of medical equipment for the center.²²

¹⁹ "Grant Assistance for Grassroots Human Security Projects (GGP)," Ministry of Foreign Affairs of Japan, 2024, https://www.np.emb-japan.go.jp/itpr_ja/11_000001_00711.html.

²⁰ "Grant Assistance for Grassroots Human Security Project (GGHSP) Scheme," Ministry of Foreign Affairs of Japan, 2022, https://www.tz.emb-japan.go.jp/itpr_en/kusanone.html.

²¹ Ministry of Foreign Affairs, "White Paper on Development Cooperation 2022 Japan's International Cooperation," March 2023.

²² Ibid pp 100

Impact of COVID 19 on Human Security

COVID-19 is the most severe outbreak in recent history. On March 11, 2020, it was officially proclaimed a pandemic. This led to systemic issues in political governance, public health, and the global economy. The outbreak of a new pandemic was not surprising considering our growing awareness of how factors like habitat degradation, increase population and urbanization, globalization of trade, and agricultural practices that are intensive raise the danger of zoonotic pathogen transmission. Moreover, since 2002, a number of zoonotic diseases—including MERS-CoV, SARS, Ebola and Zika that are caused by viruses have repeatedly emerged and spread as a result of human activity. The probability of an epidemic developing is higher in areas where there is decreased deforestation, biodiversity, and imbalanced ecosystems in built environment, such as densely populated areas, poorly ventilated commercial spaces, and mass transit vehicles, may contribute to the spread of viruses.²³

In terms of the Human Security component, minority and low-income groups are disproportionately affected by COVID-19, which highlights the significance of socioeconomic variables in susceptibility to the virus and its exposure. The pandemic has brought to light the close relationship between non-communicable diseases and infectious diseases, with the former significantly influencing the severity of the latter. Studying the relationship between viral infections and environmental causes of chronic illnesses, such as air pollution, chemical toxicants, climate change, and socioeconomic variables, is crucial. Covid-19 will have long-lasting consequences on the built environment and the layout of cities. It has affected behaviour, business and working conditions, in many regions of the world, including more digitization and reducing mobility and physical interactions. Recovery strategies may have an impact on the environment and the physical and mental health of the community in the future along with the disease itself. In addition, the pandemic and the accompanying prevention efforts have brought to light significant disparities in the majority of nations that may only get worse as a result of financial crisis.²⁴

In terms of managing health crises generally, this pandemic has brought attention to the challenges associated with incorporating environmental health viewpoints into policies and

²³ Marco Liddo, "Edited by the Impact of Covid-19 on Human Security," 2021, https://www.un.org/humansecurity/wp-content/uploads/2021/06/Human_security_covid_CeSI_MAECI_May_2021_1.pdf.

²⁴ Ibid 23

control methods that have mostly centered on containing the infectious outbreak. It appears that this pandemic has encouraged the nonuse of plastics and disposable items, which has contributed to a failure to meet sustainability goals in this domain. To effectively include and develop concerns about environmental health into health crisis management, it is necessary to investigate the advantages, disadvantages, and potential ramifications of the actions made to mitigate the spread of an infectious agent. The crisis on health is becoming a political, social, economic, and environmental issue.²⁵

Most COVID-19 patients were said to be asymptomatic. In the early stages of the pandemic, the probability of a COVID-19 breakout in Nepal was considerably underestimated, and with time, the number of cases increased. Significantly, Nepal healthcare system was not prepared to handle such outbreak in regard to the physical hospital infrastructure, the availability of medical personnel, and the organization of safety and diagnostic supplies for healthcare providers who are working in the frontline. There were false beliefs circulating in the community that the people of the Nepal were immune to COVID-19 for unidentified reasons. And though there was no scientific proof, they thought that their traditional medicinal and cooking techniques worked well against the illness. In one sense, it has been difficult, especially for medical personnel, to combat COVID-19 with the greatest of caution and little funding. However, the scientific community faced a hurdle in conducting a thorough analysis of the illness outbreak and recommending to the government the development of an effective strategy.²⁶

Both Nepal's public health and economic growth have been impacted by the pandemic. In Nepal, SARS-CoV-2 was found in wastewater. Megacities and Terai regions were more prone to SARS-CoV-2 infections. Males and in the workforce groups were found to be the most exposed population. Managing the increasing number of COVID-19 cases in Nepal has proven to be a major difficulty due to the country's limited resources for healthcare.²⁷

UNICEF describes Bhutan's COVID-19 containment effort as "arguably the fastest vaccination campaign to be executed during a pandemic," and this has contributed to Bhutan's success against the virus. Fiscal and monetary policies have also been implemented

²⁵ *ibid*

²⁶ Prabin Dawadi et al., "Understanding COVID-19 Situation in Nepal and Implications for SARS-CoV-2 Transmission and Management," *Environmental Health Insights* 16 (January 2022): 117863022211043, <https://doi.org/10.1177/11786302221104348>.

²⁷ *ibid*

by the government of Bhutan to maintain financial stability and safeguard the weak during the pandemic. Bhutan's distinctive Gross National Happiness (GNH) norms, which were established in the 1970s and codified later, have served as the foundation for these initiatives. The GNH principles seek to balance growth with social, cultural, and environmental goals.²⁸

After the first case was found, foreigners were not allowed to enter the country via air. The National Preparedness and Response Plan (NPRP) for COVID-19 was developed by the government in a proactive manner with the goal of improving the health sector's ability to monitor, identify, manage, and prevent the virus, respond to it, and recover from pandemic in the country. The creation of special isolation units for patients with the COVID-19 in local and national hospitals was another early response. Flu clinics were established throughout Bhutan to identify different virus strains. The plan is adaptable, with modifications and evaluations carried out by the Ministry of Health's Technical Advisory Group (TAG) when needed.²⁹

Environment Policies Government of Nepal

Nepal: Promoting a Human Security and Gender Equality-Based Approach to Migration and Adaptation to Climate Change -Human mobility is high in Nepal, with both forced and voluntary migration occurring there. The risk posed by climate change is very significant in the nation. The issue of climate change and human mobility is intricate and multidimensional, encompassing various policy domains such as development, environment, migration and climate change, security and humanitarian aid, among others. In order to give solutions for individuals on the individuals to move, and to stay, the government of Nepal is eager to solve the matter in an integrated and cohesive manner. The project was started in the year 2023 with the goal is to assist the Nepalese government in addressing issues along the MECC nexus in a way that prioritizes gender equality and human security. The project's objective is to expand the body of knowledge in order to better advise policymakers and influence decisions around gender, migration, natural disasters, and climate change. In addition, the initiative will help local governments create strategies for safe gender responsive, regular and orderly migration as well as climate change adaptation by using a

²⁸ "Containing COVID-19 in the Land of the Thunder Dragon," IMF, n.d., <https://www.imf.org/en/Publications/fandd/issues/2021/12/Trenches-Containing-COVID-Land-Thunder-Dragon>.

²⁹ "OVERCOMING COVID-19 in BHUTAN LESSONS from COPING with the PANDEMIC in a TOURISM-DEPENDENT ECONOMY" (Asian Development Bank, 2021), <https://www.adb.org/sites/default/files/publication/761051/overcoming-covid-19-bhutan-lessons.pdf>.

human security approach The project will encourage collaborative, participatory methods to analyze and address the factors that force people to relocate and support the government's climate action initiatives, and improve the population's ability to adapt by giving migration a choice by collaborating with multiple government spheres, prominent civil society organizations (CSOs), and communities.³⁰

Nepal has signed international accords on gender equality and climate change, as well as adopted national policies and legislation to address these challenges. Some important policies and legal frameworks are briefly summarized below.

Climate Change: Since joining the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, the Government of Nepal has implemented policies, strategies, and programs to mitigate and adapt to climate change. The 2001 Millennium Development Goals and the 2030 Agenda for Sustainable Development of 2003 addressed climate change, either directly or indirectly, the government established the National Adaptation Programme of Action (NAPA) in 2009 to prepare and implement climate adaptation programs at the local, community and national levels. In 2011 Nepal's Climate Change Policy was developed and adopted. In the same year, An Implementation Framework for the Local Adaptation Plan for Action (LAPA) was designed to integrate climate change into the plans for local development. A Local Adaptation Plan has been implemented in susceptible areas using this approach. Community Based Adaptation Plan is being adopted at the community level indirectly. The 2019 National Climate Change Policy was developed on the 2011 policy's implementation lessons. The 2018 Nepal National REDD+ Strategy aims to minimize greenhouse gas emissions due to forest degradation and deforestation. The GoN, a party to the Paris Agreement, developed the first intended nationally determined contribution (INDC) in 2016 with 14 targets, followed by the second NDC in 2020 that specifically addresses GESI concerns. Additionally, climate change policies have been developed in eight sectors.³¹

³⁰ "Nepal: Promoting a Human Security and Gender Equality-Based Approach to Migration and Adaptation to Climate Change," International Organization for Migration, n.d., <https://www.iom.int/project/nepal-promoting-human-security-and-gender-equality-based-approach-migration-and-adaptation-climate-change>.

³¹ "The State of Gender Equality and Climate Change in Nepal State of Gender Equality and Climate Change in Nepal," n.d., <https://asiapacific.unwomen.org/sites/default/files/Field%20Office%20ESEAAsia/Docs/Publications/2021/12/FuII%20report%20Dec2021%20Report%20State%20of%20Gender%20Equality%20and%20CCinNepal-compress.pdf>.

Gender Equality: The GoN has several plans, regulations, initiatives, and programs to promote gender equality. The 2015 Constitution is the main document that prohibits discrimination against individuals based on their religion, origin, race, tribe, caste, gender, economic status, language, location, or ideology. After this, the government implemented a number of policy initiatives and programs that promoted social inclusion and gender equality through its Fourteenth Three-Year Plan (2016–17–2019–20) that recognizes social inclusion, gender equality and gender mainstreaming as crucial cross-cutting objectives. The strategy prioritizes specific initiatives like social security and fair resource distribution to combat poverty and gender inequality in "backward" areas and marginalized communities. The document includes special chapter that recognizes gender equality, empowerment of women, and inclusion as cross-cutting issues. The current Fifteenth Three-Year Plan (2020/21–2023/24) seeks to eliminate poverty, inequality, and all forms of discrimination by enhancing people's and groups' ability to access opportunities and resources. According to the Plan document, every industry will create gender-related policies and programs, and all government entities must guarantee 50% female involvement. Additionally, the Plan specifies that gender-responsive budgeting must be institutionalized at all governmental levels.³²

Agriculture

Given that the agricultural and food production industries are among the most susceptible to environmental changes, the government of Nepal views them as the most important sectors. Progressive policies have been developed by the agriculture industry to support social inclusion and gender equality. The National Agriculture Policy 2004, Agricultural Extension Strategy 2005, Gender Mainstreaming Strategy 2006, Agriculture Development Strategy 2015–2035, Gender Equity and Social Inclusion Strategy Framework 2016, Livestock Master Plan 1996–2015, Agriculture Perspective Plan 1995, National Agriculture Policy 2004, and the National Seed Vision 2013–2025 are the main sectoral policies. These policies place a strong emphasis on expanding women's, the underprivileged's, and marginalized groups' benefits as well as leadership and decision-making opportunities in agriculture.

The 2015 the Agriculture Development Strategy (ADS) is the main guiding document for ensuring the security of food and nutrition of the most marginalized rural populations, such as expectant and nursing mothers, excluded and indigenous communities, and residents of underprivileged areas. A GESI strategy for agriculture is required to be developed, according

³² *ibid* pp22

to the Ten-Year Action Plan under the ADS. This entails honouring women farmers, allocating sufficient funds for empowerment of women related initiatives, like guaranteeing women's access to and ownership of productive resources and encouraging women to take on leadership roles in the agricultural industry. By 2035, the policy aims to increase the percentage of farms owned by women to 50% from 10% in 2010. Ownership of this kind may be individual or collective. Additionally, it promotes pay parity for women in initiatives aimed at developing agriculture. The plan acknowledges the negative effects of climate change and the necessity of implementing suitable adaptation measures to raise productivity in the agricultural sector.

Since quotas were introduced, women have had better access to agricultural supplies and have been guaranteed representation and involvement in farmer groups and training programs. For the first time, the 2015 Nepalese Constitution upholds the right of farmers to have access to land for farming, protects historically used indigenous seeds and farming species, encourages state-level land reform initiatives for agriculture, and forbids absentee land ownership. However, due to a lack of enabling legislation and the continued prevalence of the patriarchal worldview, the vast majority of women still do not own land. Gender equality is found only in laws and regulations, despite the positive provisions of GESI in the policies, according to a recent Food and Agriculture Organization (FAO) evaluation. Policies and programs frequently focus on ensuring women participate in the program rather than addressing structural impediments to gender equality. The government's commitment to addressing the concerns of women, indigenous people, and marginalized groups is stated in the ADS, but it is unclear how this promise will be carried out. Similarly, the ADS mentions the creation of mechanisms such as matching grants and agribusiness incubators but offers no details on how they would be put into practice or what kinds of advantages will be extended to women and other marginalized groups. Additionally, it says nothing about how climate change impacts women farmers differently and the necessity of taking gender-specific action to address this impact.

At the Central level the Ministry of Agriculture and Livestock Development (MoALD) is responsible for the development of women and promoting gender equality. Since the Women Farmers Development Division (WFDD) was founded in 1993, women's participation in training programs has been prioritized in an effort to promote the programming that is gender-balanced within the ministry. The MoAD³⁴ established the Gender Equity and Environmental Division (GEED) in 2004 in response to an assessment of the WFDD's effects

and in an effort to institutionalize women's engagement in all agricultural subsectors. To incorporate underprivileged and marginalized populations and assist their livelihood, the GESI Section replaced the GEED Section in 2012. The GESI Section is responsible for monitoring and recording GESI-related data from the previous five development regions and for putting into practice a budget that is responsive to GESI. Along with other line ministries and development organizations, the GESI Section coordinates within the MoALD.

A few significant obstacles that the GESI Section must overcome are its restricted mandate, authority, and personnel resources. For instance, the GESI focus point lacks a specified terms of reference (ToR). Rather, the ToR for the assigned technical staff mentions GESI mainstreaming responsibilities in a few phrases as an extra task without any deliverables to fulfill and without a set budget or time allotment. The focus point's capacity is not being built, and it is just presumed that the individual is capable of performing the GESI integration task.³³

Energy

With the exception of the Three Year Interim Plan 2013/14–2015/16, none of the Five Year Plans address concerns related to gender equality and inclusion in the energy sector. To promote rural (renewable) resources in Nepal, the Government of Nepal and the Alternative Energy Promotion Centre (AEPCC) have created a number of policies. Key policies for Nepal's alternative energy sector are the 2006 Renewable (Rural) Energy Policy, the Subsidy Delivery Mechanism Policy 2009, Subsidy Policy for Renewal Energy 200 and the Renewable Energy Subsidy Policy 2016. The goals of the Renewable Energy Policy of 2006 are to: (a) give rural areas access to electricity; (b) to use electricity to protect the environment; (c) make use of energy to create jobs; and (d) carry out community-managed initiatives that also take inclusion and gender equality into account. But the policy only has a very narrow understanding of gender and inclusion, and it ignores the obstacles that women, the poor, and marginalized groups face. These include their limited or nonexistent access to credit, their inability to pay for electricity, the difficulties that poor households face in providing labour, and their inability to influence user committee and construction company decisions or to receive benefits from alternative energy programs.

³³ "The State of Gender Equality and Climate Change in Nepal State of Gender Equality and Climate Change in Nepal," n.d., <https://asiapacific.unwomen.org/sites/default/files/Field%20Office%20ESEA/Docs/Publications/2021/12/Full%20report%20Dec2021%20Report%20State%20of%20Gender%20Equality%20and%20CC%20in%20Nepal-compress.pdf>.

In 2009, a Renewable Energy Subsidy Policy was developed to encourage the use of technologies for renewable energy, after the implementation of the Renewable Energy Policy. But it only accepted income-based exclusion, ignoring other types of discrimination. The GoN's long-term objective of electrifying rural areas is at odds with international and national policy commitments to social inclusion and gender mainstreaming. The provision of a blanket subsidy without taking into account multiple factors that might act as barriers to access, such as more expensive transportation in remote locations and financial difficulties of impoverished households, households headed by women, and households with disabled individuals, is a glaring example of this. The 2016 Renewable Energy Subsidy Policy attempted to close some of these gaps by offering the groups that are socially excluded and women with specific subsidies. For example, (i) an additional NPR 2,500 subsidy to households that fall into any of the following categories: backward groups, single women victims of disasters, conflict affected, and endangered ethnic groups and poor according to criteria set by the Government of Nepal (ii) an additional NPR 20,000 under solar thermal technologies for rural areas to target groups that had at least 50% single women, ethnic groups that are endangered, backward and disaster victims.

Additionally, the 2016 Renewable Energy Subsidy Policy aims to minimize rural poverty and increase employment opportunities in rural areas, especially for low-income households, single mothers, victims of natural disasters, and socioeconomically disadvantaged groups; lessen the drudgery of rural women; and support women financially who are raising dependent children and indigenous communities that are in danger. The diversity of people is generally ignored by this policy. It does not specifically address other historically underprivileged groups like hill and Tarai Dalits, with the exception of single women and endangered indigenous cultures. The majority of programs still fail to specifically address the disparate demands of various social groups, entrenched social injustices, and other obstacles to benefits access and participation. The only government policies that guarantee women's participation in decision-making at the local provincial and federal levels are those that pertain to local governance.

Many government energy programs, such as the National Rural and Renewable Energy Programme, the Rural Energy Development Programme, and AEPC's Energy Sector Assistance Programme, are heavily focused on social inclusion and gender issues. These programs are guided by AEPC's GESI Mainstreaming Plan. Nevertheless, there are no women in planning or decision-making roles inside the ministry or its major energy entities.

This might have had a role in the gender-insensitive procedures, policies, and outcomes in the energy industry. GESI has only been incorporated into energy-related organizations and initiatives in order to satisfy donor or more general policy needs. Although social inclusion and gender equality are generally supported by current energy-related regulations, these policies and guidelines mostly view women and other excluded groups as end consumers or beneficiaries rather than as the primary customer. Gender analysis could aid in the development of energy-related policies by providing a better understanding of the demands, challenges, and capacities of both men and women. This would lead to more successful interventions. The way things are currently done inhibits women from pursuing the greater prospects brought about by the new energy sources, such as being an owners, entrepreneurs and energy technicians etc.

At the institutional level it was discovered that just 13 (18%) of the 84 workers (including the minister) in the Ministry of Energy and Water Resources and Irrigation (MoEWRI) are female. There are just five women in high officer positions, and two of them work as technical support personnel. The remaining six women work in assistant-level positions like procurement assistants or computer operators. The ministry does not have a department, division, or sector that is in charge of gender and social inclusion concerns, nor does it have a gender expert or gender focal point. Before the federal system was established in 2017, the Environment, Energy, and Climate Change departments of the 75 District Development Committees and the nine regional service centers carried out sub national energy-related programs. The responsibility for coordinating with these sub national procedures went to the AEPC GESI Unit. But since the new federal structure was established, it is no longer apparent what these processes' functions and connections are. Additionally, they require qualified human resources.

With the exception of a few projects supported by donors, government and funders do not prioritize helping government employees improve their GESI analytical abilities. The AEPC's 2014 gender audit survey revealed that most employees comprehend GESI to some extent, although their task is restricted to gathering information on the beneficiaries' and participants caste and sex. Very few officials have completed gender-specific skill development training. AEPC had intended to examine the GESI capacity demands, however such plans were never carried out. Similarly, very little funding is provided by the ministry and its departments for GESI initiatives. Just 55 (13.44%) of the 409 actions in the AEPC's yearly work plan for 2013–2014 was GESI related.

At the local level according to a recent evaluation of organizational development and capacity needs conducted by the Renewable Energy for Rural Areas Project in Nepal, Provinces 1 and 7's urban and rural municipalities did not have any appropriate GESI policies or strategies. In accordance with constitutional rules and the Local Governance Operation Act of 2017, GESI was taken into account when forming local bodies, establishing goals for development initiatives, and creating budgets. However, there were no GESI initiatives or policies. Women and other oppressed groups, such as Dalits, lacked the knowledge and ability to access or claim the provisions of the GESI.

In the hydropower industry, women are likewise excluded from sharing the benefit since they are underrepresented throughout, starting with stakeholder meetings and from employment and local hiring, practices and the process of determining development objectives. Even more disadvantaged are women from marginalized groups, such as Janajatis, Dalits, extremely impoverished, and women with disabilities.³⁴

Water

The Environment Protection Act of 1997, the Environment Protection Regulation of 1997, the Water Resources Act of 1992 and Regulation of 1993, and other important water legislation does not talk about gender issues. Women's participation in decision-making processes is ensured by quotas set by sectoral policies in drinking water, irrigation and sanitation. As per the Irrigation Regulation 2003, women and marginalized groups are given participation in local water management committees at a rate of thirty-three percent. There are provisions for 30% female involvement in user committees in both the Rural Water Supply and Sanitation National Action Plan and the National Water Supply and Sanitation Policy 2003. A framework for inclusion and equity is part of the Water, Sanitation, and Hygiene (WASH) Sector Development Plan (2016–2030). GESI-related measures can also be found in other policy papers, such as the National Sanitation and Hygiene Master Plan 2011. The master plan makes it clear that women should be included in the design and implementation of programs.

³⁴ "The State of Gender Equality and Climate Change in Nepal State of Gender Equality and Climate Change in Nepal," n.d., <https://asiapacific.unwomen.org/sites/default/files/Field%20Office%20ESEA/Docs/Publications/2021/12/FuII%20report%20Dec2021%20Report%20State%20of%20Gender%20Equality%20and%20CCinNepal-compress.pdf>.

In WASH sector, women are underrepresented in the planning field. In the irrigation industry, women do not currently have a 33% representation, despite the outmigration rates of the male are high. Women are merely tokenly represented, regardless of the women are filled. At the local and household levels, women's particular water needs are frequently disregarded at the household and community level. For example, in operation and canal design women's need for water are for cleaning, cooking, caring for animals, and vegetable gardening are seen as secondary. Additionally, when there are no males in the home, women frequently need to rely on male relatives to get the water for irrigation, and they get less than male irrigators.

According to an ADB-conducted GESI evaluation of the water sector in 2011, there are many major obstacles to resolving GESI in WASH. Firstly, i) there is a lack of diversity in the Department of Water Supply and Sanitation, with just 6% women of the 1511 government employees 94% are male. The bulk of the workforce was made up of Brahmins and Chhetris (61%) and Dalits (2%); ii) no institutional mechanism or staff was in place to integrate gender and social inclusion; iii) lack of budget that was gender responsive in the institution.

The Ministry of Energy, Water Resources, and Irrigation currently oversees the water sector. The ministry employs very few women, primarily in lower-level administrative positions, as previously mentioned. The Water and Irrigation Secretariat does not include any female members. Nonetheless, a woman serves as the joint secretary of the Water Division, which is separate from the ministry. Men lead all three of the Water Division's sections, and the other five officials are also men. The Department of Water Resources and Irrigation (DWRI) members are all male.

The Programme, Budget, and Monitoring Division, which includes a dedicated Monitoring and Evaluation Section, is responsible for overseeing and evaluating the MoEWRI. However, the evaluation turned up no proof that the ministry has kept an eye on GESI in the water industry. The ministry lacks an appropriate sectoral GESI policy, strategy, or guideline, in contrast to several other sectoral ministries like the Ministry of Urban Development or the Ministry of Federal Affairs and General Administration.³⁵

³⁵ "The State of Gender Equality and Climate Change in Nepal State of Gender Equality and Climate Change in Nepal," n.d., <https://asiapacific.unwomen.org/sites/default/files/Field%20Office%20ESEAsia/Docs/Publications/2021/12/FuII%20report%20Dec2021%20Report%20State%20of%20Gender%20Equality%20and%20CC%20in%20Nepal-compress.pdf>

Water Resource Strategy 2002 The National Water Resources Strategy was developed by the Nepali government earlier in 2002, with the stated objective being "living conditions of Nepali people are significantly improved in a sustainable manner." The 2002 strategy outlined the medium-term (15 years), long-term (25 years), and short-term (5 years) plans that were developed through very extensive stakeholder discussions. Adoption of IWRM principles, which are based on resource conservation and environmental protection with the concept that management of the river basin should be done holistically, was one of the policy tenets that guided the strategy's design. It also emphasized the idea of autonomous, responsible, and decentralized agency, which is based on the concepts of social justice and economic efficiency.

National Water Plan 2005 Established on the strategy's broad objectives, the 2005 National Water Plan embraced the larger national goals of financial growth, alleviating poverty, security of food, safety and health of the public, decent levels of living for the populace, and environmental protection. The plan included activities for each time horizon in the water resources sector and included short-, medium-, and long-term action plans along with the corresponding institutional and financial requirements. The National Water Plan established long-term goals for 2027, However, the planned activities and initiatives have not yet begun in full, so the plan's objective is still far from being accomplished.

In the irrigation sector, the Water Plan set goals for the developed area to be 71, 85, and 97 percent of the potential irrigable land in 2007, 2017, and 2027, respectively. After the potential irrigable area was updated to 2.265 million hectares from the earlier estimate of 1.76 million hectares in 2002, the current estimate is roughly 48%, which is a lower achievement. As a result, the present irrigation development would only be about 62%, compared to the 2017 aim of 85%. Goals utilizing additional irrigation-related metrics, like crop intensity, yield, crop diversity, irrigation efficiency, and irrigation service charge recovery, have all significantly underperformed.

Similar goals were set for the hydropower sector, with output capacities of 700 MW in 2007, 2100 MW in 2017, and 4000 MW in 2027. The purpose of this capacity is to meet demand within the country and, if there is surplus, to be sold to neighbouring countries. Among the 107 hydropower plants, the installed capacity is only 1247.51 MW.

One significant accomplishment of the Plan is that it sparked a number of movements to update the institutional and legal framework surrounding water and to bring water resources

to the public's attention. It did however pave the way for the government to rethink its strategy and update the outdated Water Resources Act of 1992 by establishing a new Water Resources Policy and Bill and acknowledging integrated approaches as the cornerstone of water resources management.³⁶

The "Green City Initiative Plan" (GCIP) of Ilam was created in reaction to the city's shifting demographics, rising building and traffic, and associated environmental and social issues. The municipality of Ilam established new regulations aimed at promoting the city's economic expansion by sustainable development; the key to this was its effective branding and promotion as Nepal's "Green City." A group of international, national, and local players developed the Green City Development Strategic Plan (2012–16) as a follow-up to the Government of Nepal Local Development Act and the City Developmental Plan (2011–12) of the Ilam municipality. To identify key stakeholders and develop the GCIP, a core group made up of the Namsaling Community Development Centre (NCDC, the oldest NGOs of Ilam working on sustainability of environment), at the local level the Strengthening of Environmental Administration and Management (SEAM)–Nepal, Ilam municipality and the Ilam Chamber of Commerce was formed. As per the GCIP, the municipality faced several strategic issues, including pollution, degradation of the environment in urban and peri-urban areas, rising solid waste amounts, inadequate medical facilities, and poor governance. These issues were to be addressed through environmentally friendly development. The GCIP is a comprehensive policy document that integrates goals focused on environment (e.g., organic farming, plastics ban, eco-friendly tourism solid waste management) with overall development goals (e.g., sanitation, adequate water for drinking, gender equality promotion, infrastructure development) in a number of socioeconomic sectors, including environment, energy, urban planning, and agriculture.³⁷

Environmental Acts of Nepal

The Environment Protection Act of 1996 and the Environment Protection Rules of 1997 came after the establishment of the Ministry of Population and Environment (MOPE) in September 1995. The Environmental Environmental Protection Act (EPA) 1997 is a

³⁶ "Water Sector Policies and Guidelines of Nepal Climate Adaptation and Resilience (CARE) for South Asia Project," 2021, https://www.adpc.net/igo/category/ID1811/doc/2022-otj7NA-ADPC-Water_Sector_Policies_and_Guidelines_of_Nepal.pdf.

³⁷ Mona Chettri, "Making 'Green Citizens' in Ilam: Development and Transformation in East Nepal," *South Asia: Journal of South Asian Studies* 42, no. 5 (September 3, 2019): 971–87, <https://doi.org/10.1080/00856401.2019.1653029>.

combination of these two laws. This law was seen as a significant advancement in Nepal's efforts to strike a balance between environmental fragility and economic growth. Enacted by the Parliament in 1997, this law is recognized as a significant accomplishment of South Asia's environmental movement. It is the first all-encompassing law that safeguards biodiversity development and management as well as the environment. As such, it fills in a gap in the Nepalese Constitution of 1990 by providing a more systematic definition of pollution measurements and mitigation strategies. This law aims to protect public health and safety by mitigating the negative effects of development, strike a balance between economic growth and environmental preservation, and encourage responsible utilization of natural resources to prevent further degradation of the surrounding area.³⁸

The 1997 Environment Protection Act, section 2(a), defines "environment" as "the interaction and interrelationship among the components of natural, cultural, and social systems, economic, and human activities and their components." Under Nepalese law, the term "environment" has only one definition, which is subject to interpretation by the courts depending on the situation.

The Master Plan for the Forestry Sector (MPFS), a 25-year long policy and planning framework, was enacted by the government of Nepal in 1989. The Forest Act of 1993 established the legal foundation for the plan's execution, which was followed by the Forest Regulation of 1995. These documents collectively allowed for a significant change in the management of Nepal's forest resources by establishing community forestry—a system in which the government transfers control of a forest area to a community forest user group (CFUG). The group is subsequently given access to forest products and is in charge of managing the forest sustainably under the direction of district-level forestry representative. Almost a quarter of Nepal's forests are now covered by community forestry.

National Mines and Management Act 1995 This Act establishes a legislative framework for the Kingdom of Bhutan to control the mining industry and governs the exploitation of minerals within its borders. According to the Act, the Government alone is the only owner of all ownership rights to minerals found on either private or public territory. All powers, including control over all exploration, mining, mineral processing, and geo scientific

³⁸ Mohan B Dangi, Erica Schoenberger, and John J Boland, "Assessment of Environmental Policy Implementation in Solid Waste Management in Kathmandu, Nepal," *Waste Management & Research* 35, no. 6 (April 9, 2017): 618–26, <https://doi.org/10.1177/0734242x17699683>.

activities in Bhutan, should be delegated to the Head of Division by the Head of Ministry, who alone has the ability to lease mineral deposits.³⁹

Local Self-Governance Act 1999 (LSGA) According to the LSGA, municipal administrations are in charge of waste collection, transportation, and final disposal; local ward committees are in charge of cleanliness, sanitation, and waste disposal. It gives municipalities the authority to charge residents for the disposal of waste fees and to fine persons up to NR 15,000 if they fail to dispose of their waste in approved areas. Except in homes where voluntary door-to-door waste pickup is in practice, Kathmandu city has not enforced the direction to collect fees for solid waste management (SWM). Municipalities also appear to be at fault for the ineffective policies, given their inability to increase local income bases and their unwillingness to enforce codes.⁴⁰

There are numerous environmental safeguards in the 2015 Nepalese Constitution. The Nepalese Constitution states in Article 30 (1) that "every citizen shall have the right to live in a clean and healthy environment" and that a "clean environment" is a fundamental right. Article 30 (2) of the constitution also encourages the state to create the necessary legal structures to balance the environment and development.⁴¹

The government's announcement that 2015–2024 will be the "Forest Decade for Conservation" was another noteworthy development in 2015. The "Forest Policy" was created and approved by the government in accordance with this declaration. In the process of drafting the policy, the government also made revisions to the 2012 concept of "Forest for Prosperity" as well as to other policies and programs already in place, including the "National Wetland Policy 2012," "Medicinal and Non-Timber Forest Product Development Policy 2003," "National Biodiversity Strategy and Implementation Planning 2014-2020," "Climate Change Policy 2011," "Procedure for Using the Forest Land for Other Purposes 2005," and "Revised Forestry Master Plan 1989."⁴²

³⁹ "AJNE.org | Asian Judges Network on Environment -," www.ajne.org, accessed May 31, 2024, <https://www.ajne.org/document/mines-and-minerals-management-act-1995>.

⁴⁰ Mohan B Dangi, Erica Schoenberger, and John J Boland, "Assessment of Environmental Policy Implementation in Solid Waste Management in Kathmandu, Nepal," *Waste Management & Research* 35, no. 6 (April 9, 2017): 618–26, <https://doi.org/10.1177/0734242x17699683>.

⁴¹ "Environment Convention 2075: Environment for Sustainable Development - ICIMOD," accessed May 29, 2024, [https://www.icimod.org/event/environment-convention-2075-environment-for-sustainable-development/#:~:text=Article%2030%20\(1\)%20of%20the](https://www.icimod.org/event/environment-convention-2075-environment-for-sustainable-development/#:~:text=Article%2030%20(1)%20of%20the).

⁴² Amber Prasad Pant, "COUNTRY REPORT: NEPAL Development of Environmental Law in 2015," *IUCNAEL EJournal*, 2015.

On December 17, 2015, the "Nature Conservation National Strategic Framework for Sustainable Development (2015–2030)" was published. The "National Conservation Strategy of Nepal 1988" was superseded by the Framework. The Framework is a broad tool that promotes equal distribution of benefits, efficient use of resources, and environmental conservation. It is going to be in force till 2030.

The "Guidelines for Approval for Operation of Earthquake Affected Buildings 2015" were also introduced in 2015 by the Department of Urban Development and Building Construction. The Guidelines encompass government building construction, maintenance and repair, recovery, and retrofitting; they also cover apartment complexes, department stores, shopping malls, government and private hospitals, nursing homes, schools, and movie theatres. To be qualified for a bank loan or loan from other financial institutions, the owners of these properties must get a safe operating license from the Department of Urban Development and Building Construction's District Office. Per the Guidelines, a three-person team led by a divisional engineer shall review and validate license applications. On-site visits and a review of quality assurance documentation will be part of the inspection process.

The Parliamentary Environment Protection Committee sent a directive to the government on renewable energy sources on December 17, 2015. The Committee recommended raising the financing for solar panels rooftop in cities to the Ministry of Population and Environment. The Ministry of Federal Affairs and Local Development were instructed by the Committee to come to a consensus regarding the advancement of environmentally sustainable technology. By amending Section 39 of the Motor Vehicle and Transport Management Act of 1993, the Committee instructed the Government to promote, employ, and utilize environmentally friendly automobiles. The Committee instructed the Government to make comparable changes to the 2014 "Environment Friendly Vehicle and Transport Policy." The Council of Ministers was instructed by the Committee to conduct an extensive investigation into the functioning of mono rail, trolley buses, cable cars, trams, and railroads. Furthermore, the Committee recommended that the National Planning Commission give priority to building railroads, trolley buses, ropeways, cable cars, and monorails.

The Ministry of Agricultural Development and Nepal Telecom (NT) reached an agreement on December 31, 2015, to give farmers access to agro-climatic information. As per the agreement, NT is going to create a mobile application named "Our Agriculture" (also known as "HamroKrishi"). The app will make information easily accessible to Android phone users

and activate a toll-free number for informational purposes. Notifications and agricultural information will also be sent to farmers via mobile message.⁴³

The Environmental Protection Act 2019 The Environment Protection Act of 2019 is a parliamentary statute that gives the central government significant authority. Section 15(1) of the Act of 2019 requires the government to establish rules for reducing and regulating emissions, toxic waste, and pollution through various activities, including cars, machinery, hotels, industries and restaurants. Section 15(2) prohibits any activities that may harm individuals or the environment or violate government standards (as outlined in Section 15(1)). Unlike the 1997 Act, the 2019 Act addresses climate change and greenhouse gas reduction. Part 4 of the Act covers laws related to climate change. Sections 23-26 mandate that central, provincial, and local governments work together to reduce pollution and emissions. It is the sole responsibility of the central government for identifying locations that generate greenhouse gases and determining their national reference levels.⁴⁴

Furthermore, the sole authority is granted to the central government of Nepal to enact laws and establish the policies, plans of action, and strategies that the government at the province, and local organizations must follow in order to lessen the negative effects of climate change. The central government has been directed by The Act to recognize a region as a green or open area. On the other hand, the central government has the authority to designate a region as polluted and to forbid anyone from entering or to perform any activities there. These legal frameworks make it clear that the province governments would have to structure their roles (pertaining to environmental protection) in accordance with the Centre's policies. With the goal of reducing harmful environmental effects and compensating pollution victims, the competent Parliament of Nepal passed the Environment Protection Act, 2019. The Government of Nepal is actually required to supervise Reports on Environmental Study, Environment Impact Assessment or initial Environmental Examinations, or any similar document, if the project is of national significance, falls under federation jurisdiction, or is an interprovincial development project, as stated in Section 3(2)(a) of the 2019 Act.

⁴³ Amber Prasad Pant, "COUNTRY REPORT: NEPAL Development of Environmental Law in 2015," *IUCNAEL EJournal*, 2015.

⁴⁴ Alok Kumar Yadav and Jivesh Jha, "Environmental Protection Regime under Nepal's Constitutional Renaissance: A Revisit to the Salient Features of the Environment Protection Act, 2019," *Graphic Era Hill University LAW REVIEW* 2, no. 1 (2022).

As some of the most common consequences of climate change are heat waves, melting glaciers, rising sea levels, severe droughts, warmer oceans and storms, it can also directly kill animals, ruin animal habitats, and have a disastrous effect on people's quality of life and communities. In this regard, the Environment Protection Act of 2019's Chapter 4 is committed to addressing the uncertainties and disruptions caused by climate change. The Ministry of Environment of the central government has been authorized to conduct regular studies regarding the effects of climate change on biodiversity, ecosystem and local communities. The Ministry of Environment strategies and policies to address climate change are to be implemented by the government of Nepal, provincial local governments and provincial governments together, as per Section 23(2).

In order to manage the negative effects and risks associated with climate change, the Government of Nepal may issue the necessary directives by publishing a notice in the Nepal Gazette regarding the measures to be taken for the reduction of these effects and risks in the sectoral policies, strategies, and action plans that the Nepal government, Provincial Government, Local Level, and other public bodies as well as the private sector are to implement. In order to reduce and conserve carbon emissions, the government of Nepal may engage in the carbon trade through the channels set forth by the international agreement, with any foreign government or organization, private sector or business entity.⁴⁵

In the chapter 5 of the Act Any location with a natural heritage, an attractive location that is deemed to be highly significant from the perspective of environmental protection, or a location of cultural or historical significance may be maintained as an environment protection area by the Government of Nepal, after consulting with the Provincial Government, the concerned Local Level, thereby publishing a notice in the Nepal Gazette.

The Government of Nepal can, after consulting with the relevant Local Level, issue any necessary regulation for the management, restoration, or balance of the environment in any such place or region whenever it becomes apparent that negative impacts have been caused, or are likely to be caused, on the health of the public or environment of any particular area or place as a result of excessive soil erosion, exploitation of natural heritage, environmental pollution, or the occurrence of a natural calamity.⁴⁶

⁴⁵"The Environment Protection Act, 2019 (2076)," October 11, 2019.

⁴⁶"The Environment Protection Act, 2019 (2076)," October 11, 2019.

Environmental Policies and Acts of Bhutan

The Paro Resolution on Environment and Sustainable Development of 1990- A major turning point in Bhutan's continuous attempts to preserve its stunning natural environment and raise the standard of living for its people. The resolution articulates the people of Bhutan's collective worries about potential environmental hazards and establishes a guiding principle for preventing such threats in the future. The resolution's attachments contain detailed suggestions for laws and other measures that would guarantee the long-term viability of both environmental preservation and socioeconomic growth. The Paro Resolution also emphasized the necessity of encouraging particular responsibility in environmental preservation and the significance of developing a national environment strategy for Bhutan.

On His Majesty the King's royal command, as a part of the Planning Commission, A National Environment Committee was formed in 1989. The Planning Commission was separated from the National Environment Secretariat (NECS) and became a stand-alone organization in 1992 and began operating as the National Environment Commission (NEC). A strategic, multi-sectoral unified framework for the environment is being established by the NEC. There is currently no institutional framework in place for tracking, reporting, and coordinating conservation efforts. The National Environment Strategy (NES) was created as the initial step toward achieving the goal.

In order to guarantee that environmental issues constitute a crucial component of the development agenda, one of the NECS's duties is to create a National Environmental Strategy (NES). The strategy's ultimate objective is to direct development processes in a way that minimizes or mitigates effects on the environment. The National Environment Strategy (NES) for Bhutan delineates three primary paths to sustainable economic development: elevating agricultural self-sufficiency, hydropower expansion and broadening the industrial foundation.⁴⁷

As stated in the 1998 National Environment Strategy, Bhutan has chosen to follow a middle path for development. A classic saying from Bhutan provides background for this approach in keeping with the principles of sustainable development: "It is better to have milk and cheese many times, than beef just once." It has been acknowledged by His Majesty King Jigme Singye Wangchuck that Bhutan needs to choose the middle route towards

⁴⁷ "ENVIRONMENTAL LEGISLATION and INSTITUTIONS in BHUTAN" (SOUTH ASIA COOPERATION FOR ENVIRONMENT PROGRAMME (SACEP) COLOMBO, SRI LANKA, n.d.), accessed July 27, 2023.

development. This development acknowledges the need to advance in terms of technology, scientifically and mechanically, grow our economy, while still upholding our rich cultural legacy, our age-old values, and protect our foundation of natural resources.

Everybody in Bhutan is entrusted with managing the natural resources of the country for the benefit of both the present and the future. Therefore it has been a fundamental responsibility of all the people to protect the natural environment, conserve the country's rich biodiversity, and prevent ecological degradation in all its forms, including visual, noise and physical pollution, by adopting and supporting environmentally friendly practices.

In accordance with the Constitution, 60% of the forest cover must be preserved for all time. Additionally, the government is specifically tasked with protecting the environment, preventing pollution, securing ecologically harmonious sustainable development, and facilitating a secure environment.⁴⁸

The 2000 Environmental Assessment Act, delineates protocols for evaluating the possible environmental impact of strategic policies, plans, programs, and projects; formulating policies and preventative measures to mitigate potential negative consequences; and endorsing positive environmental outcomes. The NEC is the principal body in charge of enacting regulations under the act, making decisions about the granting of environmental permits, keeping an eye on compliance, pointing out violations and providing updates on enforcement. Under the NEC's appointment, responsible authorities may also be tasked with granting environmental clearances.

The duties and protocols for carrying out the Environmental Assessment Act, 2000 with regard to the granting and upholding of environmental clearances for specific projects are delineated in greater detail in the Regulation for Environmental Clearance of Projects, 2002. It specifies, in further detail, which project activities are subject to direct environmental clearance issuing from competent authorities and which ones necessitate examination and environmental clearance issuance by the NEC itself. The Economic Affairs ministry, Agriculture, and Forests, Works and Human Settlement, as well as district environmental committees, are the competent authorities. However, the NEC is authorized to grant approvals for more extensive industrial operations (such as mining operations covering more

⁴⁸ "Review and Compendium of Environmental Policies and Laws in Bhutan" (Asian Development Bank, 2014), <https://www.adb.org/sites/default/files/publication/150136/review-compendium-environmental-policies-and-laws-bhutan.pdf>.

than three hectares); projects located within protected areas; projects situated within fifty meters of a public park; human habitations, schools, hospitals or places of worship; or other sensitive areas identified by the NEC secretariat. The regulation also describes how to conduct an environmental assessment, what has to be done for public consultation, how to evaluate both new and current projects, and what has to be done for monitoring, appeals procedures, handling breaches, penalties, and compensation for noncompliance.⁴⁹

In order to facilitate regulation in the following areas, eight additional rules were created: urban development, transmission lines, highways and roads, forestry, hydropower, mining, and tourism. Each describes the particular conditions that must be met in order to receive environmental clearance for the given project or sector. Unless otherwise expected, all activity within these areas requires environmental clearance from the NEC or the appropriate competent body before the approval of the project.⁵⁰

The main legislative framework for environmental management and protection in Bhutan is established by the National Environment Protection Act of 2007 (NEPA). They are:

- 1) Environmental protection principles;
- 2) the National Environment Commission (NEC) Constitution, duties, and authority;
- 3) protecting the quality of environment through waste management, hazardous material management, and environmental pollution control;
- 4) preserving forests, ecosystem integrity and biodiversity;
- 5) citizen participation rights and environmental information access; and
- 6) the guidelines for environmental audits, confirmation, enforcement, and sanctions⁵¹

Climate Change Policies of Bhutan

Bhutan is committed to sustainable development that is ecologically balanced and aligned with the Gross National Happiness development concept. Rising emissions from economic development will need to be reduced in order to maintain carbon neutrality, and low emission development routes must be pursued across all sectors. The Climate Change Policy was

⁴⁹ "Review and Compendium of Environmental Policies and Laws in Bhutan" (Asian Development Bank, 2014), <https://www.adb.org/sites/default/files/publication/150136/review-compendium-environmental-policies-and-laws-bhutan.pdf>.

⁵⁰ *ibid*

⁵¹ *ibid*

created to address the opportunities and difficulties brought about by new developments in the national and worldwide arena of climate change. The following are the policy goals:

- 1) To offer strategic advice to guarantee that Bhutan stays carbon neutral and safeguards the welfare of its people by effectively and efficiently adjusting to climate change.
- 2) To guarantee the significant involvement of every relevant party in climate change action through well-coordinated efforts with distinct roles and responsibilities; and
- 3) to guarantee that the opportunities and difficulties posed by climate change are tackled at all relevant levels, using suitable implementation strategies (money, technology, building capacity, and raising awareness), as well as integration into essential plans and policies.

These policies goals are guided by the following principles

- 1) the state policy principle, as stated in Article 9.1 of the Constitution of the Kingdom of Bhutan, is "to ensure a good quality of life for the people of Bhutan in a progressive and prosperous country that is committed to peace and amity in the world";
- 2) The state policy principal, as stated in Article 9.2 of the Constitution of the Kingdom of Bhutan, is to "Promote those conditions that will enable the pursuit of Gross National Happiness";
- 3) The fundamental liberties and responsibilities stated in Article 5 of the Constitution of the Kingdom of Bhutan for each individual to serve as a trustee of the Kingdom's environment environment and natural resources for the welfare of future generations as well as present, including avoiding the spread of pollution
- 4) Articles 5.1 and 5.2 of Bhutan's Constitution recognize intergenerational equity, provide a healthy and secure environment, and address intergenerational equity for both current and future generations of the country's citizens.
- 5) The "no-regrets" strategy for taking constructive action to protect against climate change and the precautionary principle as stated in Chapter II of the National Environment Protection Act 2007 (NEPA 2007).
- 6) According to NEPA 2007, Chapter II, the polluter pays principal where polluter is responsible for paying for resource use and environmental damages, as well as for the payment of ecosystem services.

- 7) The NEPA 2007 articulates the right to information and the involvement of all stakeholders.
- 8) Ensuring that national climate priorities are implemented in a clear and coherent manner in accordance with international commitments.⁵²

In order to protect the environment for the benefit of current and future generations, the Royal Government of Bhutan committed to remaining carbon neutral at COP15 of the UN Framework Convention on Climate Change in 2009 and reaffirmed that commitment under its Nationally Determined Contribution (NDC) to the Paris Agreement in 2015.

To guarantee the successful and efficient execution of this policy, the following declarations and initiatives will direct Bhutan's climate change measures.

- 1) To keep the condition of forests and soils carbon neutral, manage and preserve their carbon sinks.
- 2) Taking innovative steps to decouple greenhouse gas emissions from the mining, transportation, and waste management industries. These steps should include integrating higher value chains into manufacturing processes, increasing productivity, and diversifying the energy and resource use, thereby creating energy security and economic resilience.
- 3) Control agricultural sector greenhouse gas emissions to promote food and nutritional security without endangering food production.
- 4) Meet your obligations under the UNFCCC and the Paris Agreement for mitigation in a way that is consistent with national priorities and procedures. This includes creating periodic Nationally Determined Contributions, which help you prioritize mitigation efforts across pertinent sectors.
- 5) Make use of the necessary Paris Agreement mechanisms, such as "framework for non-market approaches to sustainable development," "cooperative approaches," "mechanism for mitigation and sustainable development," and other initiatives, to help achieve the objective of maintaining carbon neutrality.
- 6) According to mutually negotiated agreements, emission reduction credits from different activities will be distributed, and the government will levy a fixed amount to

⁵² "Climate Change Policy of the Kingdom of Bhutan 2020 National Environment Commission Royal Government of Bhutan," 2020, <https://faolex.fao.org/docs/pdf/bhu207787.pdf>.

pay transaction and administrative costs as well as contributions to national climate funds.

- 7) Track Bhutan's progress toward carbon neutrality by evaluating the country's annual greenhouse gas emissions by sector and its recurring assessments of the soil and forest carbon sinks.
- 8) Create reporting, tracking, and verifying (MRV) systems at the project level in accordance with the specifications and guidelines of pertinent national and international mechanisms.

The RGOB will take action to safeguard Bhutanese citizens' lives, their livelihoods, health and happiness from the negative effects of climate change by enhancing their capacity and resilience to lessen vulnerability and by incorporating adaptation strategies into all stages of development planning.

- 1) Establish a consistent, evolving, and iterative approach to evaluate Bhutan's vulnerability and adaptation needs at all levels and sectors, taking into account the unique requirements of vulnerable populations as part of the National Adaptation Plan process.
- 2) Wherever possible, encourage and evaluate the incorporation of planning for climate change adaptation and the execution of adaptation measures into local and national level plans.
- 3) To facilitate an iterative, long-term process of planning and implementing adaptations, improve the information on climate knowledge system.
- 4) Evaluate the degree to which adaptation to climate change has advanced, taking resilience into account.

National Climate Change Committee: The National Environment Commission (NEC) will continue to serve as the high-level National Climate Change Committee. (NCCC) The highest cross-sectoral body for environmental policy and regulation, the NEC is chaired by the Hon. Prime Minister or his representative and is in charge of coordinating all issues pertaining to the preservation, enhancement, and protection of the environment. The National Environment Protection Act of 2007, the Waste Prevention and Management Act, the Water Act, the Environmental Assessment Act, and other governmental directives serve as the foundation for the NEC's mandate. The National Environment Commission Secretary (NECS) provides assistance to the NCCC in carrying out its duties and responsibilities.

Climate Change Coordination Committee (C4): This technical group provides a venue for the debate and coordination of issues pertaining to climate change in Bhutan and submits suggestions for the NCCC/NEC to take into account. The NECS Secretary serves as the chair of the C4, which is made up of senior executive representatives from agencies and organizations that are stakeholders. The Executive Order issued on October 16, 2016, by the Prime Minister, serves as the committee's mandate. The Climate Change Division of NECS assists the C4 in carrying out its mandate and duties.

Gross National Happiness Commission: In addition to organizing, the formulation of policies and five-year plans, planning, and setting priorities for the country, the GNHC is tasked with organizing and facilitating the mobilization of all outside funding and making sure that funds are distributed to agencies and local governments in accordance with government priorities and guidelines after consulting the Ministry of Finance.

Ministry of Finance: It is the responsibility of the Ministry of Finance (MoF) to develop and carry out sound financial management and dynamic fiscal policies by optimizing resource generation, allocating resources effectively, managing debt responsibly, and proper liability of public resources. The Public Debt Policy, Public Finance Act, Income Tax Act, , Fiscal Incentives 2017, Revised Taxes and Levies Act and PPP Policy regulate the mandates and functions of the Ministry of Finance.

The National Center for Hydrology and Meteorology (NCHM) was established with the mission of serving as a national resource for hydro-meteorological data, services, and advice to satisfy the needs of emergency services, the general public, and other specialized users. NCHM will offer various early warning services, climate modeling and scenarios, and hydro-meteorological data and information.

Royal University of Bhutan & Research institutions: In accordance with their individual mandates, the research institutions and the Royal University of Bhutan RUB must carry out needs-based research to facilitate well-informed decision-making as well as the preparation and execution of climate change action.⁵³

The Kingdom of Bhutan's 2006 National Adaptation Programme of Action is predicated on a thorough analysis of the nation's vulnerabilities connected to climate change. The NAPA

⁵³ "Climate Change Policy of the Kingdom of Bhutan 2020 National Environment Commission Royal Government of Bhutan," 2020, <https://faolex.fao.org/docs/pdf/bhu207787.pdf>

states that Bhutan is more vulnerable to glacial lake outburst floods from the northern mountain ranges, has delicate alpine ecosystems, and depends heavily on monsoon rains. The frequency and severity of floods and flash floods are increasing, and Bhutan's economy is particularly sensitive to climate change due to the country's large agrarian population and the threat posed by variations in seasonal water flow to hydropower output.⁵⁴

Forest and Agricultural Policies

The nation's forests were nationalized in 1969 with the passage of the Bhutan Forest Act. The very first National Forest Policy was formulated in 1974 with the objective of preserving 60% of the land permanently covered by forests. This document established the foundation for the nation's scientific forest management. It also outlined methods for managing the nation's forests in terms of conservation, resource surveys, afforestation, utilization of forest, management of wildlife, recreation, administration, training, government funding, forest research, and publicity. In 2010, a draft update of this approach was completed.

The Forest and Nature Conservation Act, 1995, and the Forest and Nature Conservation Rules, 2006, following modifications in 2008, provided the primary legislative frameworks for the nation's forest management and conservation.⁵⁵

The Bhutan Forest Act, 1969 was superseded by the Forest and Nature Conservation Act 2023, which deals with matters pertaining to forest management, social and community forestry, government-reserved forests, trade of forest products and transportation, creation of protected areas, preservation of soil, water, and wildlife, as well as enforcement and sanctions for noncompliance. Additionally, it preserves the local population's access to forest resources by acknowledging their traditional and cultural rights to forest usage. It also permits community forestry on government forestland and private forestry on privately registered holdings. The act's implementation is within the purview of The Department of Forestry within the Ministry of Agriculture and Forests' The specific steps needed to enable the act's implementation are outlined in the Forest and Nature Conservation Rules.

⁵⁴ Marion Davis and Lailai Li, "REGIONAL CLIMATE CHANGE ADAPTATIONKNOWLEDGEPLATFORM for Asia Understanding the Policy Contexts for Mainstreaming Climate Change in Bhutan and Nepal: A Synthesis," 2013, <https://www.sei.org/mediamanager/documents/Publications/Climate/akp-understanding-policy-contexts-bhutan-nepal-synthesis.pdf>.

⁵⁵ Marion Davis and Lailai Li, "REGIONAL CLIMATE CHANGE ADAPTATIONKNOWLEDGEPLATFORM for Asia Understanding the Policy Contexts for Mainstreaming Climate Change in Bhutan and Nepal: A Synthesis," 2013, <https://www.sei.org/mediamanager/documents/Publications/Climate/akp-understanding-policy-contexts-bhutan-nepal-synthesis.pdf>.

The 2006 Forest Fire Rules and Rules on Biological Corridor, the 2008 Bhutan National Human-Wildlife Conflict Management Strategy, and the 2009–2019 National Strategy for Community Forests: The Way Ahead, contain additional legislation pertaining to forestry and conservation. These offer comprehensive guidelines for conservation and forest management. The primary competent body in charge of directing the application of laws and regulations pertaining to the management and conservation of forests is the Ministry of Agriculture and Forests. Apart from the aforementioned policies and laws pertaining to the agriculture sector, the National Irrigation Policy of 2012, the Seeds Act of Bhutan, 2000, the Livestock Act of Bhutan, 2000, and the Pesticides Act of Bhutan, 2000 offer significant direction for the sustainable administration of the agriculture sector. The Ministry of Agriculture and Forests is also in charge of putting these acts into effect.⁵⁶

Biodiversity Act of Bhutan 2022: This Act hereby repeals section 73 of the National Environment Protection Act of Bhutan 2007 as well as the Biodiversity Act of Bhutan 2003 and any subsidiary laws created and implemented under it. This Act pertains to access to and use of genetic resources or their derivatives from Bhutan, whether they are accessible in-situ or ex-situ, and aims to encourage the protection and sustainable use of biological resources. This Act covers traditional knowledge related to Bhutan's biological resources and how to use it. This Act protects breeds, varieties, and breeders' rights to promote the creation of new breeds as well as farmers' rights for their contributions to the preservation, enhancement, and dissemination of genetic resources. Biological resources that are transferred, pooled, traded, and exploited as commodities for immediate use and consumption are not covered by this Act. The prevention of commercial exploitation, which is required to uphold morality or public order and avoid harm to the environment, the public interest, or farmers' customary rights, is not covered by this Act. Varieties that are eligible for patent protection are exempt from this Act. This Act exempts human genetic resources.⁵⁷

Bhutan Water Policy:

The aim of the 2003 Water Policy was to ensure that Bhutan will continue to have an abundance of water to support socioeconomic growth. The current and upcoming generations

⁵⁶ “Review and Compendium of Environmental Policies and Laws in Bhutan” (Asian Development Bank, 2014), <https://www.adb.org/sites/default/files/publication/150136/review-compendium-environmental-policies-and-laws-bhutan.pdf>.

⁵⁷ “BIODIVERSITY ACT of BHUTAN 2022 - National Biodiversity Centre,” July 29, 2022, <https://nbc.gov.bt/news/biodiversity-act-of-bhutan-2022/.s>

of Bhutanese citizens shall be guaranteed access to sufficient, secure, and reasonably priced water to sustain and improve their standard of living.

The Royal government of Bhutan's dedication to the preservation, management and development of the nation's water resources is reflected in the Bhutan Water Policy. It acknowledges that water is an invaluable natural resource and a cultural legacy that is critical to the functioning of the economic, social and environmental spheres. Thus, in order to support national growth without jeopardizing the integrity of the natural ecosystem, water resources must be carefully managed and protected.

The policy takes an integrated approach that acknowledges natural connections. The management of water resources in aquifers and river basins, encompassing both upstream and downstream water users, is emphasized. It is important to consider surface and ground water as two different aspects of the same resource, frequently connected closely. Both the quantity and quality of water are crucial and related. Coordination is required in the planning and management of water resources. Water is an essential resource for development since it ensures everyone's basic well-being. To fulfil the fundamental requirement for happiness, water programs must address balanced development and provide fair access to this essential resource thus advancing the country's Gross National Happiness (GNH) objective.

Water is essential to human survival and is thus directly related to poverty. Water-related activities will combat poverty and provide people with their right to a decent living, acknowledging the direct correlation between the two. All types of water resources, such as glaciers, snow, rivers, streams, springs, lakes, wetlands, rainfall, soil moisture, and groundwater, shall be covered by the policy. The Water Policy takes a comprehensive, multi-sectoral approach to the management of water resources while acknowledging that each sub-sector has a role to play in achieving the goals of the policy. The following is a thematic grouping of the policy principles:

- 1) Priorities and interests of water users;
- 2) Development and management principles for water resources;
- 3) water resources management for institutional development
- 4) International water⁵⁸

⁵⁸ "BHUTAN WATER VISION and BHUTAN WATER POLICY" (National Environment Commission , n.d.), <https://faolex.fao.org/docs/pdf/bhu201322.pdf>.

Water for Food Production

Water for drinking and sanitation for the survival of humans must come first when there are insufficient quantities or quality of water resources to satisfy every reasonable demand. Priorities at the local and national levels will determine how much water is used for agriculture, hydropower production, industry, recreation, and other purposes. Adopting workable local solutions should be made possible by flexible water management and laws.

An essential element of socioeconomic growth is the development of sustainable agriculture. For 79% of people, it is their primary source of income. Enough water must be provided to this industry in order to achieve national food security as a whole. Water allocation to the industry must therefore be in line with this national goal. It is necessary to provide a specific amount of water for domestic animals to consume. Water consumption in agriculture is highest. Adaptive and applied research is essential to attain improved efficiency ("more crop per drop") due to population growth and growing competition for water from other sub-sectors. Wherever possible, efforts should be made to encourage alternative water sources such as groundwater and rainwater harvesting in order to overcome local and seasonal water shortages.

Water for Hydropower

The growth of hydropower as a non-consumptive use of water, its importance as a clean, sustainable, and non-polluting energy source and its potential for generating income from exports will be acknowledged. The sub-sector's enormous potential for the socioeconomic development of the country must be used sustainably. Since the production and transmission of hydropower have connections to land and water users upstream, downstream, and en route, collaboration and cooperation are required when negotiating tradeoffs. The national interest will be the overarching consideration for all users when they consider tradeoffs in approaching these.⁵⁹

Water Act of Bhutan 2011

The Water Act of Bhutan, 2011 endeavours to guarantee the preservation, conservation, and management of water resources in a way that is financially efficient, socially just, and ecologically sustainable, while also establishing appropriate institutions. Notably, the act

⁵⁹ *ibid*

outlines the widely recognized notion of integrated water resources management, giving drinking and sanitation water management top priority, followed by agricultural and hydropower.

It establishes guidelines for upholding the minimal environmental flow criteria in the context of energy. The ministries of Works and Human Settlement, Agriculture and Forests, Health, and Economic Affairs are among the relevant competent agencies to which the NEC may assign the task of carrying out the duties assigned under the act.⁶⁰

Water Resources Right

- 1) The State owns the resources related to water. The State will own the rights to water resources, including the banks and bed of watercourses.
- 2) As the public trustee of the country's water resources, the Royal Government is responsible for making sure that water is managed, conserved, and/or protected in line with the guidelines outlined in this Act.
- 3) Every person must have access to enough water that is affordable, safe, and meets their basic requirements.⁶¹

Comparisons in the Policy Responses of Nepal and Bhutan

Nepal has adopted environmental policies taking in gender based approach. It has prioritised gender equality. It has signed international accords on gender equality. While Bhutan on the other hand has not taken into consideration gender based approach on adopting environmental policies.

Both the countries have joined United Nations Framework Convention on Climate Change. Nepal has adopted different policies in regard to climate change in the year 2011. The government of Nepal established National Adaptation Programme of Action to prepare and implement climate adaptation programmes. LAPA was designed to integrate climate change into the plans for local development. Whereas, Bhutan Climate Change policies is mainly focused on sustainable development aligned with the concept of Gross National Happiness.

⁶⁰ *ibid*

⁶¹ "The Water Act of Bhutan 2011," 2011, <https://oag.gov.bt/wp-content/uploads/2010/05/Water-Act-of-Bhutan-2011-English-and-Dzongkha.pdf>.

Bhutan is more concerned with environmental protection and as a Buddhist country they have a belief system that they protect the nature as they are scared and the abode to the deities. While Nepal also being a country with having strong religious practices there lies a thin difference among environmental protection measures, the focus there has been on development first.

Agriculture has been the main source of income for both the countries. On making the policies regarding agricultural sector Nepal has taken into account gender equality on the other hand Bhutan has tried to incorporate organic farming.

Both the countries have adopted different policies in regard to water conservation to provide a clean drinking water. Nepal has adopted Water Resources Act in 1992 which basically looks into water management and distribution. On the other hand, Bhutan has Water Act of 2011 which guarantee the sustainable use of water resource. Though policies are being made in this regard there still is water crisis in both the countries.

Both the countries have come up with environmental acts with the main focus of environment protection and sustainable use of the resources. It is mentioned in the constitution of both the countries that a right to clean and a safe environment for the present and the future population. The two countries have adopted various new policies in regard to environment, but Nepal has been slow in implementing the policies as Nepal has adopted a newly federal structure of government. Therefore, the distribution of work among the central provincial and the local level has not been managed fully. Whereas, Bhutan on the other side having a history of strong monarchy and now has adopted democratic constitutional monarchy have a well defined division of power. Therefore, in regard to environment safeguard Bhutan is much ahead of Nepal.

Hydropower is the backbone of both the countries, Bhutan policies in regard to hydropower has been taking environment factors into consideration. Nepal on the other hand has not much looked into the environmental factors.

Conclusion

This chapter deals with the different policies and acts that has been adopted in regard to environment, climate change and water in Nepal and Bhutan. The strong conservation ethic and wise leadership of the Bhutanese people are responsible for the preservation of the country's great biological richness. One of the main principles of Buddhism is conservation.

Buddhism holds that one should protect the environment and return what has been taken. Buddhism acknowledges the sacredness of life as well. The value of preserving nature in all of its forms has ingrained itself into their awareness and is essential to the way of life of the people of Bhutan, because of the wise leadership and the long-standing commitment to environmental preservation and conservation, Bhutan has 51.44% of its land area under protected area management and over 69.71% of the country covered by forests. The National Assembly's 73rd session in 1995 issued a mandate for the nation to maintain 60% of its land covered by forests at all times. Bhutan has been protected from many of the negative side effects of poorly planned or haphazard growth due to its remote location, late start to development, and conservation culture. Bhutan's natural patrimony of vast and varied forests, sparse but fertile and productive farmland, and pure water and air remains largely intact, despite the fact that most of the Himalayan region has seen its natural resource base severely compromised due to soil degradation, deforestation, pollution and erosion.

To protect and conserve the natural environment, the Government of Bhutan has ratified international accords, started programs and projects, and formed institutions. The government has designated the environment as an important priority and laid forth a plan for sustainable growth.

Deforestation has been affecting Nepal at a startling rate. Many places that were formerly rich in forest covers and abundant biodiversity are now becoming barren fields due to the high pace of deforestation. Without integrating the environment into development projects and ensuring its management, national development would not be sustainable.

The absence of essential data, technical expertise, and public awareness was noted in both countries as a major barrier to effective adaptation. The field visit in the two country highlight that while the majority of community members acknowledge that the climate is changing, they are really ignorant about the policies and government actions pertaining to adaptation and climate change. Although both nations have filed NAPAs and national government representatives have acknowledged the gravity of climate change, there are still large gaps in scientific understanding and data. Significant capacity building is needed at the sub-national level, particularly at the village level, where even government personnel have very little knowledge of climate change.

Chapter VI

Conclusion

There isn't a clear definition of what constitutes 'Human Security'. It has been referred to by a variety of terms in the literature on international relations and development challenges, as 'new concept or theory', 'global view', 'political agenda', 'analytical leading point', and 'policy framework'. The definition of Human Security is still up for debate, but proponents of the concept agree that security should be approached from a 'people-centered' rather than a 'state-centered perspective', and the worries about the safety of national borders should be replaced with worries about the safety of the people who reside there.

Absence of threats and insecurity is the most basic definition of security. To feel safe means to be free from want (for food, employment, and health) as well as fear (of sexual, psychological or physical abuse, violence, oppression or execution.) Therefore, Human Security pertains to the ability to recognize dangers prevent them when feasible, and lessen their consequences whenever they occur. It entails supporting victims in overcoming the fallout from pervasive insecurity brought on by armed conflict, breaches of human rights, and severe underdevelopment.

The main aim of this research is to understand the challenges of Human Security in Nepal and Bhutan through environmental insecurity. Environmental security is one of the components of Human Security. It has emerged as a new debatable topic and can be defined as the 'convergence of the national security and environmental considerations at the national policy'.

Environmental Security can be described as the availability of natural environment that is healthy for both humans and the environment in the future. When natural resources are overused and cause environmental damage, there is less availability, which in turn causes violence and dispute. However, discussion on environmental security is increasing because of the growing issues with climate change, sea level rise, deforestation, greenhouse effect, depletion of earth's limited resources, declining agricultural system and ozone layer holes.

There is an urgent need to address increasing environmental issues, such as deforestation, soil deterioration, water scarcity, and pollution. The world's population is expected to surpass

nine billion during the next fifty years, the production of the global economy may grow five times faster than it does now, and the scarcity of natural resources will drastically worsen. Aquifers, rivers, and other resources will likewise face extensive depletion and degradation in the next generation. Thus, environmental security has swiftly emerged as a crucial concern in this new phase of security studies.

The thesis has been divided into six chapters to understand the challenges to environment security in Nepal and Bhutan.

Summary of the chapters

The first chapter titled, “Introduction to the thesis” deals with the introduction of the study. The chapter main focus is on the background, rationale, statement of the problem, research questions and objective, literature review, research gap and research methodology.

The second chapter titled, “Human Security, Environment and the Challenges of Development” This chapter has argued as how the concept of security was monopolised by state security. The chapter has also dealt with the factors that have highlighted the importance of Westphalia system. The cold war dynamics has also been explained as how this has led to the change in the notion from state security to human security. The concept emergence of Human Security has been discussed in detail. Freedom from fear and freedom from want as a conceptual framework has been discussed taking in account Japan and Canada. It has identified the seven approaches to Human Security and taking one aspect that is environment security this study has been elaborated. Human Security and Human Rights the link between these two concepts has been explained. Further, Human Security has been explained in relation to Human Development. This chapter has discussed the emergence of the concept of Environment Security and has made an attempt to link it with Human Security. It has also addressed the developmental issue and has related it with Human Security and Environment and lastly this chapter has also discussed about sustainable development.

The third chapter titled “Human Security and Challenges to Environmental Security in Nepal” This chapter began by discussing the political history of Nepal. The chapter has addressed the Human Security issues in Nepal. The chapter has also incorporated the date from the field visit in Nepal and government offices such as Ministry of Forest and Environment, Kathmandu, ICIMOD Kathmandu, The Research Centre for Applied Science and Technology (RECAST), under Tribhuvan University, Tewa and WWF. For field visit the

three geographical region was taken into account, the Himalaya Region, Terai Region and the Hilly Region. One district from each geographical region was taken into account. The three districts were Taplejung, Jhapa and Ilam. the data collected from the field visit has also been analysed.

The chapter has also addressed the MDGs and SDGs goals and have analysed how far Nepal has been successful in achieving the goals. The chapter has further addressed the environment security issues in Nepal. It has discussed in detail about the issues such as climate change, its impact on agriculture, deforestation and hydropower. The chapter has also talked about the women participation on environment conservation with the help of some NGOs. Further it has examined the India and China influence on Nepal and how can that affect or be an aid in the development of the country.

The fourth chapter titled “Human Security and Challenges to Environmental Security in Bhutan” This chapter began by discussing the political history of Bhutan. The chapter has also incorporated the field visit to different government institutes in Bhutan such as Ministry of Energy and Natural Resources under this the Department of Environment and Climate Change, Water department, Forest department and Centre for Bhutan and Gross National Happiness Studies. It has discussed the first Human Security project in Bhutan as the country lacks in addressing the issues of Human Security and it has also been noted that in their policies there is little or no mention of the concept Human Security. In contrast it has talked about Gross National Happiness which is the guiding philosophy of Bhutan. The chapter has also dealt with the MDGs and SDGs of Bhutan and has analysed how far Bhutan has been successful in achieving the goals. The chapter has discussed the various environmental issues in Bhutan as it had done in the previous chapter taking into same parameters into account. It has also discussed about women participation and the India and China influence on its development projects.

The fifth chapter “Comparative Study of Policy Responses to Environmental Security in Nepal and Bhutan” The chapter start with addressing the similarities that these two countries share. The chapter has addressed the BBIN initiative. It has also discussed the issues of lhotsampas. The chapter has discussed and analysed different policies and act related to environment in Nepal and Bhutan.

The sixth chapter titled “Conclusion to the Thesis” This Chapter combines all the knowledge and insights gathered in the earlier chapters. The chapter covers research findings and aims to address every research questions posed in the introductory chapter.

Research Findings

The present study has attempted to respond to the research questions posed in the introductory chapter in the following manner:

How does environment play an important factor in human security?

The relation between environment and Human Security is a contested one in the modern world. Human Security, as a concept is centered around people, it puts the individual at the core of analysis. As a result, it assesses various conditions that endanger survival, dignity, and livelihood, and identifies the point at which human existence is extremely threatened. A multi-faceted understanding of insecurity is also the foundation of human security. As a result, human security requires a more comprehensive understanding of risks and covers factors that contribute to insecurity, such as those pertaining to political, social, economic, food, health, and environmental security.

The notion of environmental security encompasses a wide range of matters related to the relationship between human welfare, security and development, as well as the function that the environment and natural resources can perform throughout the spectrum of peace and security. Humans rely on the earth's ecosystems and the benefits they offer. The benefits provided include clean water and food, controlling climate regulation and diseases, offering cultural services like aesthetic pleasure and spiritual satisfaction and supports in primary production and soil creation. Degradation of these benefits can significantly impact human well-being.

The change in the environment can have direct impact on the livelihood and the security of the people. For instance, scarcity of water leads to insecurity, which adds to a decline in the production of food. In some situations, it may also result in a food scarcity. The environment has an impact on every area of human security, from food scarcity to the risk of natural disaster. The consequences of environmental damage are multidimensional. Furthermore, the change in the environmental is evident in several parts of the world, such as rising global temperatures and shifting weather patterns. Environmental changes, according to experts, have a massive impact on humanity in general.

The degradation of the environment causes human insecurity. When biodiversity is taken into account in relation to human security and well-being, several benefits are frequently possible. By keeping our ecosystems intact, we can lower our risk of contracting infectious diseases and encourage higher agricultural yields by ensuring that pollinator populations are healthy. Forests preservation benefits the quality of the air, removes carbon from the atmosphere, and provides home for a variety of species.

By concentrating just on threats, one misses opportunities relating to the environment that might be used to enhance human security. Well-being of the people, livelihood and chances for fulfillment can all benefit greatly from protecting and improving the environment. Ecosystem integrity is expected to mitigate vulnerabilities, but degradation of the environment raises the likelihood for impoverishment, displacement, and disempowerment. The environment is directly related to the existence and well-being of all people, especially the most impoverished, in developed and developing countries as well.

The impact of environmental degradation on human well-being and security has increased globally because of the exponential expansion of human activity since the Industrial Revolution, posing a challenge to the secure working environment for humans. Threats from the environment are related to how they affect human security in general, including dimensions of productivity, well-being, and survival. Social ties and people are prioritized as targets that need to be protected against environmental dangers.

The relationship between human security and environment security are closely linked. It is therefore necessary to establish techniques for dealing with environmental degradation while also preserving human security. This research has specifically dealt with the environmental challenges in two countries i.e. Nepal and Bhutan. Though very limited work is done on this aspect one cannot deny environment challenges can have a long term impact to the Human Security of that particular region

The major environmental issues affecting human security in Nepal and Bhutan?

Nepal and Bhutan, located on the southern Himalayan slopes, share many similarities but also have significant contrasts in geography, socioeconomics, and politics. According to the World Bank, 'Nepal is among the poorest nations in the world', with 57% of its 30.5 million citizens living on less than \$2 a day (in purchasing power parity, or "PPP") as of 2010. In comparison Bhutan is classified as a lower middle-income country, with roughly four times

Nepal's gross national income and just 10% of its 738,300 inhabitants dwelling on less than \$2 in 2007 (in PPP). The economy of Nepal is primarily agrarian, with 80% of people earning a living from agriculture and forests. Tourism also serves as an important source of revenue in Nepal.

In Nepal, for example, approximately two-thirds of families use firewood for cooking and heating, and the average household spends about 50 days per year collecting firewood. Given the amount of reliance on natural resources, it is reasonable to predict that exploitation of natural resources, such as deforestation, makes rural households environmentally and economically vulnerable to sustaining their livelihoods. The problem is likely exacerbated further by the lack of alternative economic opportunities at the local level. The primary causes of deforestation and forest degradation in Nepal are typically attributed to overharvesting of fuelwood and fodder, forest fires, and timber extraction. In the past, Nepal's forestry resources have declined since there was no suitable policy to direct the establishment of the sector's institutions, laws, and operations. Historically, political and economic factors have influenced Nepal's forestry policies more so than ecological ones. Thus, basic concerns of forest/biodiversity protection, green economy, and localized adaptation and mitigation of climate change should be the focus of research and development in the forestry industry in order to produce more practical policies and programs.

According to the Women's Environment and Development Organization (WEDO), there is growing recognition that climate change is a significant danger to global security and a major human security issue. While everyone is impacted by climate change, regardless of color, caste, ethnicity, sex, or financial level, impoverished countries, communities, and individuals are more severely affected, and the effects of climate change exacerbate already-existing inequities. The impact on the world's poor will be particularly bad, impacting their security and means of subsistence disproportionately. Seventy percent of people who live in poverty are women. They consequently tend to be the ones who suffer the most after natural disasters. Women are often disregarded in contributing to climate change solutions and overall human security.

As stated in the International Institute for Environment and Development (IIED) paper, vulnerable areas and populations that are vulnerable will be most severely impacted by climate change due to its propensity to multiply threats and the intrinsic susceptibility of those whose human security is uncertain to any additional hazards. Communities that are

already experiencing violence, weak institutions, poverty, food insecurity, and the spread of illnesses will find it difficult to adjust to the effects of climate change and will worsen the existing problems.

Nepal is ranked as the 4th most vulnerable country due to the impacts of climate change. Nepal's climate and disaster risks are likely to worsen impacting people, economic growth, the environment, and advancements in development. Over the past 40 years, landslides and floods have been the most common dangers; as climate change accelerates, these disasters are predicted to increase.

The agriculture sector in Bhutan, comprising forests, employs around 60% of the population and accounts for nearly 17% of GDP in 2010. However, in Bhutan just about 3% of the country's land is accessible for farming. Bhutan's government considers hydropower to be the most important economic sector, accounting for approximately 21% of GDP and 45% of income. It also produces nearly all of the country's electricity needs.

Bhutan today has over 51.44% of its land area under protected area management and over 69.71% of the country under forest cover as a result of wise leadership and a strong tradition of environmental protection and preservation. While many parts of the world have experienced frightening deforestation rates, Bhutan's forest cover has actually increased over the last decade. The 73rd session of the National Assembly in 1995 demanded that the country keep 60% of the country under forest cover at all times.

One of the nation's most vulnerable to climate change worldwide is Bhutan. There are some 2,700 glaciers in the landlocked, mountainous nation, and they are starting to melt, creating landslides and floods in an already vulnerable ecology. Around 80% of the people in this country make their living from agriculture; hence due to climate change significant impact can be seen in agricultural land and produce.

One of the world's most diversified forest regions, Bhutan's forests are vast, untouched, and only seldom disrupted by human habitations, in contrast to many other Himalayan regions where forests are frequently found in small patches encircled by land. But this does not apply to the eastern and southern foothills, where there is a practice of shifting farming and the density of the population are high. A number of factors, including the distribution of State Reserve Forest Land and forest conversion for the development of hydropower projects,

mining, agriculture, and quarries, and the construction of electrical transmission lines, are the main causes of deforestation and forest degradation in Bhutan.

Human-Wildlife Conflict is also one of the challenges that both the country faces.

How do government and various institutions respond to the environmental challenges in Nepal and Bhutan?

Stakeholders in Nepal and Bhutan, including governments, investors, and NGOs and INGOs, are working together to develop adaptation plans and policies. Their effectiveness depends on meeting local communities' demands and aligning with local responses. .

Nepal has committed to maintaining 45% of the country under forest cover by 2030, but the country has already reached the target of the forest cover. The climate change action plan in Nepal includes 'green, resilient and inclusive development'. Nepal has also aimed to achieve net-zero emissions by 2045. The Nepalese government is currently endeavouring to address the challenges posed by environmental issues, particularly climate change, through the implementation of conventional security measures. Nepal has launched its first National Adaptation Plan a comprehensive plan designed to increase the country's ability to adapt to climate change.

The constitution of the Bhutan Mandates that at least 60% of the country should be forest covered. Hence the forest cover in Bhutan is 69.79%. Bhutan government has passed the law to preserve, conserve and protect the environment. The Parliament of Bhutan has a standing Committee on the environment and climate change. It has a 'National Climate Change Policy' that mainly focuses on carbon neutrality and sustainable development. It has also established strategic partnership to address climate change.

His Majesty King Jigme Singye Wangchuck states that Bhutan needs to choose the middle route towards development. This development acknowledges the need to advance in terms of technology, scientifically and mechanically, grow our economy, while still upholding their rich cultural legacy, our age-old values, and protect our foundation of natural resources.

The government of Nepal and Bhutan both have adopted different policies and acts that have been beneficial in addressing the challenges poised by environment insecurity. It has been observed that all the environmental challenges has not been addressed yet. Therefore there still need strict laws and measures to implement the policies.

Limitations of the Research

The research has been carried out in two countries i.e Nepal and Bhutan. The field visit has been done in both the countries. In Nepal the three geographical districts were taken into account namely Taplejung in the Himalaya region, Ilam in the Hilly region and Terai in the Plain region. The different government offices in Kathmandu were also visited but in Bhutan the two districts namely samste and chukkha which were to be taken for the field visit was not done as the permission was not granted and also few people responded in Bhutan as the people was also not open about sharing their viewpoints. Nonetheless, the government institutes and officials in Bhutan were interviewed. Some secondary sources were taken into consideration.

Concluding observations

Human Security is a larger framework of 'freedom from want and freedom from fear'. Environment Security has emerged as a critical component of Human Security. Both the Himalayan Kingdom states are facing a number of alarming problems that could endanger their very existence in the near future. With climate change causing glaciers to melt and changing weather patterns, as well as unsustainable development methods, the Himalayas are experiencing a wave of destruction that needs to be addressed more comprehensively. So there is a fear of increasing environmental challenges the region has to confront.

All the environment policies in Nepal talks about environment protection and conservation and also the constitution of Nepal talks about the right that every citizen has to stay in a safe and clean environment. The main problem in Nepal has been the implementation of these policies. After the country went into the federal structure, there is a three tire government in Nepal the Central, Province and Local level. It has also been observed that the people at the decision making level fail to communicate the policies to the local people. Therefore there is lack in the awareness level too. The government of Nepal has prioritized environment issues and has worked on environment conservation initiatives but the public is still not aware of the work done by the government as environment issues are rampant in Nepal, so there is a gap between the two which needs to be addressed. If there is environmental problem the ecosystem has to bear it and if we talk about ecosystem humans also gets affected. Therefore while making the policies it is very important to consider human factor as well.

Bhutan talks about environment conservation and preservation. They have the philosophy of Gross National Happiness but their policies lack the mention of the term 'Human Security'. In GNH they have the domain which usually talks about the protection and the conservation of environment. Therefore compared to Nepal Bhutan has much cleaner and safer environment for the people there. The policies there are mostly focused on the preservation of environment with little emphasis on the human. It is important to make environmental policies taking into consideration human factor as well. The issue of freedom from fear and freedom from want has not found mention in both Nepal or Bhutan. In these countries Environment and Human Security has been dealt with two different topics separately therefore limited research is done in the field where environment and human security are linked together. Therefore this research has tried to address this gap and it has the potential for the further research.

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ANNEXURE I
QUESTIONNAIRE FOR THE INSTITUTION (NEPAL)

Name:

Age:

Gender:

Educational Qualification:

Profession:

1. How should environment security issues fit in your national strategic planning?
2. How environment issues manifest as security challenge?
3. Since Hydropower is the main source for income in Nepal how the government is creating a balance as the construction of dam does not affect the environment and at the same time it does not affect the economy of the country?
4. What are the different environmental initiatives taken by the government so far?
5. How is Climate Change affecting Nepal?
6. What do you think about the economic and social consequence of climate change to the local people?
7. There is no mention of the word human security in any development policies in. Does this mean economic development is of a country
8. Is reducing global warming more important than improving economy?

ANNEXURE II
INTERVIEW QUESTIONNAIRE FOR LOCAL RESPONDENTS
(NEPAL)

Name

Age

Gender

Educational Qualification

Profession

Gender

1. Are you aware of the concept of Human Security?
2. If yes. What is it?
3. What is your source of livelihood?
4. What are the various schemes passed by the government for the benefit of the people?
5. From where have you heard about environment pollution?
6. How has environment pollution affected your personal health and safety?
7. In what way do you think environment is a security concern?
8. What do you think is the most important concern of environment insecurity?
9. Do you think that Climate Change is one of the most important environmental concerns?
10. Do you think that a particular group of individuals are affected by Climate Change?
11. How developments for hydropower project effect the environment?
12. How often have you witnessed a natural calamity which has severely impacted the people of Nepal?
13. Do you feel that the government initiatives reach the grass root level?
14. What do you think is the threat to your biodiversity?
15. Is there any medicine you are getting from the forests? Please Specify

ANNEXURE III

INTERVIEW QUESTIONNAIRE FOR THE INSTITUTION (BHUTAN)

Name:

Age:

Gender:

Educational Qualification:

Profession:

1. How should environment security issues fit in your national strategic planning?
2. How environment issues manifest as security challenge?
3. As most of the area in Bhutan is forest cover how has it helped the overall population of Bhutan?
4. Since Hydropower is the main source for income in Bhutan how the government is creating a balance as the construction of dam does not affect the environment and at the same time it does not affect the economy of Bhutan?
5. What are the different environmental initiatives taken by the government so far?
6. How is Climate Change affecting Bhutan?
7. What do you think the economic and social consequence of climate change to the local people?
8. Bhutan is the only carbon negative country because of its vast area which is forest cover. Has this helped the county? If yes? How?
9. There is no mention of the word human security in any development policies in Bhutan. Do GNH promote human security?
10. Is reducing global warming more important than improving economy?

ANNEXURE IV

INTERVIEW QUESTIONNAIRE TO THE RESPONDENTS (BHUTAN)

In context to Human Security

Name:

Age:

Gender:

Educational Qualification:

Profession:

Area: Rural/Urban/Tribal/Non-Tribal

- 1) Are you aware about the concept of Human Security?
- 2) If yes what do you think it is?
- 3) What is the source of your livelihood?
- 4) What is Gross National Happiness? Has it benefitted the individual?
- 5) Do you think GNH the development scheme passed by Bhutan government reached the rural people as well?
- 6) What are the various schemes passed by the government for the benefit of the people?
- 7) From where have you heard about environment pollution?
- 8) How has environment pollution affected your personal health and safety?
- 9) In what way do you think environment is a security concern?
- 10) What do you think is the most important concern for environment insecurity?
- 11) Do you think that Climate Change is one of the most important environmental concerns?
- 12) Do you think that a particular group of individuals are affected by Climate Change?
- 13) How does developments for hydropower project effect the environment?
- 14) How often have you witnessed a natural calamity which has severely impacted the people of Bhutan?
- 15) Do you feel that the government initiatives reach the grass root level?
- 16) What do you think is the threat to your biodiversity?
- 17) Is there any medicine you are getting from the forests?

ANNEXURE V

SOME PICTURES FROM THE FIELD VISIT



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