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The Role of Nordic Region in Fighting Against Climate Change: A Case Study of Sweden

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Table of Contents

Abbreviations

- United Nations (UN)
- Inter-governmental Panel on Climate Change
- European Union (EU)
- African Union (African Union)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Hydro fluorocarbons (HFCs)
- COP (Conference of the Parties)
- Clean Development Mechanism (CDM)
- United Nation Environment Program (UNEP)
- Nationally Determined Contributions (NDC)
- Enhanced Transparency Framework (ETF)
- Greenhouse Gases (GHG)
- Multinational Corporations (MNC)
- Sustainable Development Goals (SDGs)
- International Civil Aviation Organization (ICAO)
- Global Climate Action Agenda (GCAA)
- Nordic Council of Ministers (NCM)
- Fossil Fuel Subsidy Reform (FFSR)
- Nordic Development Fund (NDF)
- Nordic Environment Finance Corporations (NEFCO)
- Small & Medium size Project (SMP)
- United Nation Educational Scientific & Cultural Organization (UNESCO)
- The Economic & Social Council (ECOSOC)
- Organization for Economic Cooperation & Development (OECD)
- Environmental Non-governmental Organization (ENGO)
- NGO (Non-governmental Organization)
- South Asia Cooperative Environment Program
- South Asian Association for Regional Cooperation
- Asian Development Bank (ADP)

Abstract

Climate Change is one of the hot potatoes in global politics. The effects of global warming, increasing populations and corporation are changing our climate and atmosphere. Also, global warming changes overall pattern of the weather, causing heat waves and floods. The carbon gas emissions are also increasing. There are many other drivers of climate change which includes population and many more. It is causing serious threats to nature and environment. However, there are some countries/regions which are facing pretty heavy barriers in order to tackle climate change, but Scandinavian countries (Nordic region) remain quite successful in fighting against climate change. The role of Nordic/Scandinavian countries cannot be neglected in challenging climate change. They are taking this issue very seriously and working on it by following a sustainable approach. Sweden is leading in this role and nowadays considered as one of the most sustainable countries, (Naylor, 2019). Thus, this research will tend to find out why this above-mentioned region is playing a good role in climate change by focusing on the role of Sweden.

Keywords: Climate Change, Nordic Region, Sweden & its Environmental Policies

RIASSUNTO

L'idea sulla quale si fonda questo elaborato è la scoperta e la comprensione del ruolo e delle politiche della regione Scandinava, in particolar modo della Svezia, visto lo stato di avanzamento nella ricerca e attuazione di uno sviluppo sostenibile avviato nello stato.
Con l'avanzata di fenomeni legati al cambiamento climatico, i cui effetti e gravità sono tangibili a livello globale, è necessario rammentare come tali fenomeni siano generati dall'essere umano, non riconoscano confini e come il problema e la conseguente soluzione non siano legati unicamente ad una nazione.
Dunque, il soggetto merita anche una propria attenzione e analisi a livello globale.

La prima parte della tesi si incentrerà sull'evoluzione storica del concetto di cambiamento climatico.
Infatti, sin dal momento in cui si è inteso come il clima stesse mutando, con effetti nefasti sulle vite di persone, animali e sulle economie di intere nazioni, numerosi sforzi sono stati impiegati, al fine di mitigare le conseguenze di una simile minaccia. Data la natura di un simile ostacolo, sono state sollevate numerose e legittime questioni ed è iniziata la ricerca di nuove possibili soluzioni e alternative per ridurre l'impatto umano. Tuttavia, le dure ripercussioni del cambiamento climatico sono state oggetto di dibattito in molte conferenze internazionali, come gli Accordi di Parigi, il Protocollo di Kyoto e il patto sul clima di Glasgow.
L'evoluzione storica del fenomeno del cambiamento climatico è stata portata all'attenzione internazionale principalmente attraverso conferenze e incontri, che hanno costituito occasioni d'incontro e di dialogo tra i protagonisti economici, politici e sociali della geopolitica mondiale.
Oltre a ciò, la prima parte dell'elaborato includerà una discussione comprensiva dei report, degli atti di tali conferenze e numerose pubblicazioni prodotte da organizzazioni internazionali, come, per esempio, l'Organizzazione delle Nazioni Unite, per cercare di comprendere lo sviluppo del fenomeno e la sua sempre crescente importanza. Pertanto, per poter rallentare l'ulteriore avanzamento del cambiamento climatico, diverse misure ambiziose sono state sviluppate e messe in atto.

La seconda parte della tesi è atta a sottolineare l'attivismo ambientale e le politiche

della regione Nordica, che, congiuntamente al resto del mondo, ha intenzione di affrontare le serie conseguenze del cambiamento climatico. L'area Scandinava ha, infatti, già potuto osservare la rapida insorgenza di tali ripercussioni, inclusi il prematuro scioglimento delle nevi a causa delle crescenti temperature, alterazioni nell'ambiente e nel terreno e l'introduzione di nuove specie. Le nazioni Nordiche, rispetto ad altre aree del mondo, si distinguono per il grande zelo dimostrato nella lunga lotta contro il cambiamento climatico e le misure adottate sono state di relativo successo. Nonostante ciò, i paesi Scandinavi sono stati molto attivi nell'elaborazione di piani e strategie e nella messa in atto di tali pianificazioni, al fine di ridurre l'ammontare di emissioni di diossido di carbonio prodotte nella regione. Diversi corpi ambientali sono stati recentemente fondati, ognuno dei quali ha stabilito una propria lista di obiettivi e priorità, che devono essere raggiunti e soddisfatti nel corso dei prossimi anni.

Questa parte si focalizzerà, inoltre, sul ruolo che le nazioni Nordiche giocano, tramite il proprio impegno, nella protezione dell'ambiente dal cambiamento climatico. Su quest'ultimo tema, si predilige l'approccio inerente all'analisi della cooperazione e degli impegni presi con la comunità internazionale. Un'ulteriore peculiarità dell'approccio adottato è rappresentata dall'intenso lavoro sulla cooperazione interregionale, che potrebbe rappresentare un'utile risorsa nel frenare il problema su scala globale.

Infine, si fornisce una spiegazione delle politiche nazionali degli stati Nordici, con l'intenzione di localizzare e determinare aree grigie di una tale politica, qualora ve ne fossero.

Nel terzo capitolo si enunciano e analizzano le politiche ambientali attuate dalla Svezia, nel tentativo di effettuare una valutazione del suo attivismo nella lotta al cambiamento climatico. Già nel diciannovesimo secolo la società svedese si dovette confrontare con una serie di sfide climatiche e ambientali. Tuttavia, fu solo in un secondo momento, agli inizi degli anni '60, che la nazione svedese decise di avviare un sistematico programma per contrastare gli effetti del cambiamento climatico. La protezione dell'ambiente naturale era in cima alle priorità decisionali delle prime politiche svedesi e, dati gli esiti particolarmente efficaci di tali regolamentazioni, la Svezia è ora largamente nota come la nazione più sostenibile non solo dell'area Nordica, ma dell'intera Unione Europea.

Il Parlamento svedese e l'Agenzia Svedese per la Protezione Ambientale sono attori di primaria importanza nella formulazione e adattamento delle politiche ambientali, essenziali per poter affrontare i numerosi e diversi impatti del cambiamento climatico. Tuttavia, non sono gli unici responsabili nella gestione del fenomeno, poiché le amministrazioni delle contee svedesi e le molteplici municipalità furono anch'esse responsabili per la protezione dell'ambiente, il che rende vitale la presa in considerazione del loro ruolo durante la disamina della generale esecuzione delle leggi pertinenti al cambiamento climatico avvenuta in loco. Sin dal 1967 fino ad oggi, le politiche generali del paese sono state lodate e hanno contribuito a migliorare la reputazione della Svezia nel campo dello sviluppo sostenibile. In breve, la Svezia è stata giustamente rapida nel processo di sviluppo di una legislazione concernente l'ambiente.

La messa in atto delle leggi ambientali è stata, inoltre, supportata da Organizzazioni Non Governative e personalità pubbliche. Infatti, sono molteplici le organizzazioni che lottano per un ambiente pulito e ben conservato. In particolare, nell'ambito dell'implementazione delle leggi ambientali, la Società Svedese per la Conservazione della Natura e associazioni come "Amici della Terra" e "Teniamo la Svezia Pulita" sono ritenute essere estremamente importanti. Tuttavia, la più prominente e maggiormente conosciuta personalità è una diciassettenne chiamata Greta Thunberg, ritenuta essere la voce della consapevolezza del cambiamento climatico ed esercitante pressione sul governo svedese e sulla maggior parte dei leader mondiali. Tutte le sopramenzionate ONG e Greta Thunberg hanno accresciuto notevolmente il grado di attivismo pubblico intorno al tema del cambiamento climatico. Paragonata al resto d'Europa e del mondo, la Svezia svolge un buon lavoro nell'implementazione e messa in pratica delle proprie politiche ecologiche e proprio queste dovrebbero essere esaminate e considerate da ogni nazione come una possibile soluzione a questo problema universale.

L'ultima parte della tesi descrive i problemi ambientali e le sfide affrontate nel Sud dell'Asia, con una comparazione con la regione Nordica, in particolar modo con le politiche ambientali svedesi.

L'autore ha provato a comprendere il distacco che rende gli stati del Sud asiatico relativamente fallimentari nell'affrontare il cambiamento climatico. Ma, perché tale area geografica abbia successo nell'affrontare i problemi climatici nel loro insieme, si

necessitano sviluppi di politiche ambientali basate sulla cooperazione. Infatti, nonostante le numerose iniziative e politiche ideate dall'Associazione del Sud Asiatico per la Cooperazione Regionale (SAARC) e dalla Banca per lo Sviluppo Asiatico, rimangono molteplici le problematiche. Al fine di ottenere migliori e più benefici risultati in relazione al cambiamento climatico, queste politiche necessitano di una modifica, oppure di un rinnovamento nelle dinamiche intra-regionali, ma ciò non implica che manchino progetti a tal proposito. Infatti, il South Asian Roadmap Project è una fantastica mossa verso un'economia più verde, anche se, in termini di risultati, il programma risulta ancora non convincente.

Per poter completare la tesi, l'autore ha affrontato problematiche relative quali l'approccio con le persone per la raccolta di interviste, specialmente per quanto concerne i ministeri dell'ambiente dei sopracitati paesi. È risultato difficoltoso poi, data la natura nuova e in costante evoluzione del soggetto, il reperimento di fonti bibliografiche rilevanti e non si può che consigliare un ulteriore sviluppo di questa tematica, per il quale questo lavoro vuole porsi come un'introduzione, fornendo una prima immagine il più possibile completa attraverso l'analisi di articoli, documenti di ricerca e rapporti ufficiali.

INTRODUCTION

The world is facing music because of climate change. It is one of the toughest political issues almost everywhere in all regions. Climate change is altering and will altering serious damage to human race and planet. So, the effects of climate change are clearly understandable, (Kamarck, 2019)

Climate change is the result of changing temperature. Climate change has additionally been associated with other harming occasions like more successive and more exceptional typhoons, floods, deluges, and winter storms. This helps in increasing sea levels at different spots throughout the regions. However, they all together lead zigzag situations in term of flooding and land erosion. The reason for current climate change is generally human action by using petroleum derivatives, natural gas, oil, and coal. All these leads to greenhouse gas which affects the earth temperature. So, the rise in earth's temperature is called global warming which is considered as the main driver of climate change. Therefore, the climate is changing day by day and year by year as it is a fact. But human play a major role in this regard, (Society, 2019).

Nordic means 'northern islands' which includes Denmark, Norway, Sweden, Iceland, Finland and Faroe islands, (July 12, n.d.). It has more lot of sense when it comes to climate change. They are in top ranking by using green energy and sustainable policies. One of the plus points is that they are less populated countries. The Naylor mentioned that the Nordic countries feel more responsible in term of protection their land & environment. However, these are not onlythe reasons because pressure group e.g., the one leading by Greta Thunberg, (Naylor, 2019)

According to a newspaper article published by Xinhua in 2019, the five Nordic countries Sweden, Finland, Iceland, Norway, & Denmark have signed a declaration against climate change. According to the author, it was an official regional level meeting where prime ministers of the above-mentioned countries participated jointly. The participants focused mainly on their efforts against climate change. The author further adds that the participants had marked the Nordic values as a guiding light for their efforts. Although, the meeting candidates had optimistic vision in order to combat climate change, (Xinhua, 2019).

Sweden, one of the Nordic countries, has a top-class profile in reference to climate change. It is a small country with almost 10 million populations. According to the author, it is the most sustainable country with the observed and obeyed environmental policies. The society of Sweden is highly active in the protection of their environment. They prefer clean and green environment.

The Swedish environmental protection agency so called 'Naturvardsverket' observes the environment related policies and remain pretty much sensitive in monitoring. This agency also motivates individuals and community for solving and focusing environmental issues. Sweden got 1st ranking in the European Union in dealing with climate change because of their motivation, care, obedient behavior and also strict government policies (Mänsson, 2016).

Statement of the Problem

The world is deeply concerned about the climate change. The environmental problems throughout the world are emerging, but the majority of the regions are facing barriers in orderto tackle this big issue. However, Nordic region remain quite successful in combating climatechange and remained in top rankings with regard to climate change. The problem of the thesis will address that how Nordic region remain outstanding in dealing with climate change. Moreover, the researcher will find out the role and policies of Sweden in fighting against climate change.

Research Questions

1. How the actions of Nordic region are challenging climate change?
2. What are the policies adopted by Sweden in tackling climate change?
3. Why Sweden is comparatively successful in fighting against climate change as compared to South Asia?

Research Methodology

Qualitative methodology stands to be the best technique for accomplishing thesis. Primaryand secondary data will be used. For the purpose of the data collection, the researcher will conduct a few interviews and will also go through several books, articles, reports, journals, blogs & internet sites. All the information gathered will design in an accurate method and put in the thesis work.

Organization of the Study

The research study is comprised of four chapters which are given below. CHAPTER 1: This chapter highlights the historical development of climate change.

CHAPTER 2: This chapter describes the environmental activism and joint action ofScandinavian countries against climate change.

CHAPTER 3: This chapter illustrates the environmental policies of Sweden for climate change. CHAPTER 4: This chapter provides comparative analysis of Sweden Climate policies with South Asia.

CHAPTER 5: This chapter provides overall conclusion of the thesis and final recommendations.

CHAPTER No_01

HISTORICAL DEVELOPMENT OF CLIMATE CHANGE

Climate change like a hot potato is not only the burning issue of the present but equally of the future as well. Climate change has affected almost every aspect of human life, whether it's economic, social, cultural, or political. The discipline of International Relations has also witnessed its impact by the introduction of green politics and the inception of climate change and environmental issues as a core focus of International Relations. International Relations are not only concerned with today's climate change, but the latter is shaping International Relations in very rapid acceleration.

The first part of the thesis will focus on the instigation of climate change from a historical perspective. Climate change a blazing issue isn't the creation of abrupt human activity of the present. But it took hundreds of years. Soon after the realization of changing climate and its adverse impacts on the lives of human beings, brainwork started to minimize the challenge. This challenge has placed some serious questions on the table for discussion and to find out some alternatives to minimize the consequences.

Several conferences were held to highlight the devastating effects of climate change. The consequences of changes in the climate are spotted in the environment, human and aquatic life. These conferences and meetings of a high-level delegation of the responsible states highlight the historical development of the phenomena of climate change. As of now, climate change has clear impacts on the social, political, and economic life of human beings and the overall life on the planet earth. This chapter will discuss in detail the reports, conference papers, and various articles published by the organizations like the UN to study and analyze the historical development of climate change and its ever-growing importance.

The historical development of climate change can be witnessed by the efforts taken by the world community at large considering the efforts of the UN and other regional and Non- Governmental Organizations. This chapter highlights the past and latest efforts for climate change in the shape of UN Conferences, like the Paris Agreement, Kyoto Protocol, Glasgow Climate Pact, and so on.

Change in Climate

Climate change is the long-term change in the weather patterns and earth's surface temperature. This alteration may be due to natural causes such as variation in solar oscillation. But, since 1800, the major cause is human interferences and activities such as burning fossil fuels like coal, gasses, and oil, which contributes to an increase in the level of greenhouse gasses.

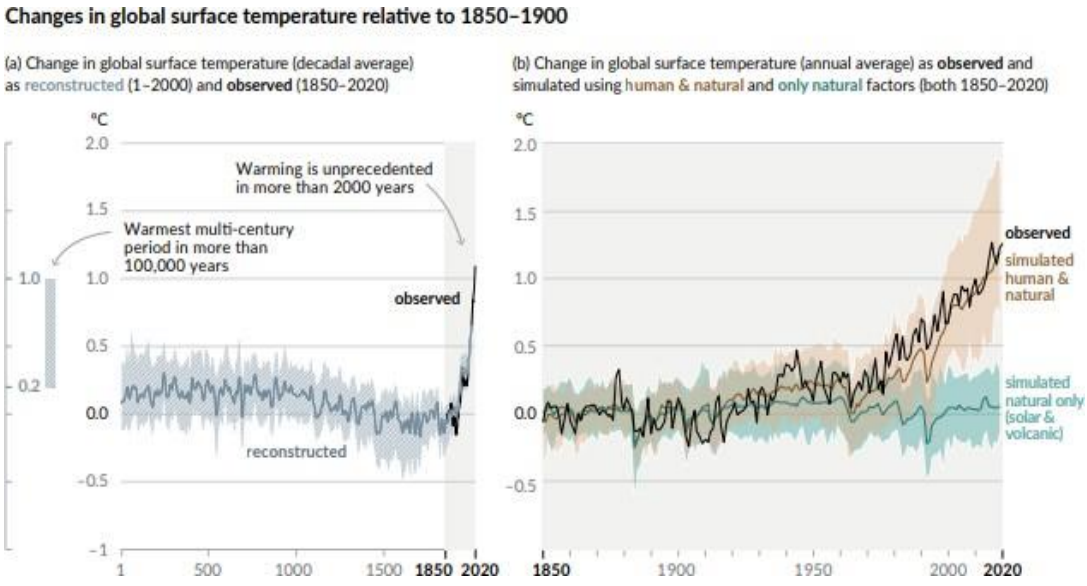
For decades, the variation in the climate of the earth has been changing, and the evident source of climate change is human influence. In addition to air pollution and other greenhouse gasses that affects the climate, human will surely exert great influence on alteringthe climate in the future. Human interference creates havoc and pervasive disruption in nature and affects the massive population throughout the earth. Instead, humans should tackle the hazards and reduce their interference to protect the ecosystem and prevent the catastrophic effects on people. The people who suffer the most and the environment which ensures the most are the vulnerable ones.

For Earth's welfare, equilibrating the climate and attaining net-zero emission of carbon dioxide requires an urgent and vital reduction in greenhouse gasses which is caused by humans. Restraining greenhouse gasses, CO2, and air pollution, majorly limiting the use of methane possibly give comfort and advantages to upcoming generations and would lessen thehazardous effects of climate change. According to the IPCC Working Group I report, ClimateChange 2021: the Physical Science Basis, which was approved by 195 member governments of the IPCC in a virtual approval session in July 2021 (IPCC, 2021), suggests that benefitting the quality of air stabilize the global temperature. And it would take 20 to 30 years.

The world community has been more attentive over the last couple of decades to the outcomes of climate change which will eventually affect the potential security. Many countries including The United Nations (UN), European Union (EU), United States (US), and African Union (AU) are investigating and analyzing, how shared resources, national security, border integrity, trade routes, and international political partnerships and economic relations will be affected by changes in climate.

The expected global temperature which is caused by human interference rises from

0.8°C to 1.3°C and with a possible estimate of approximately 1.07°C in the period of 1800-1900 to 2010-2019(Allan et al., 2022). The worldwide glacier retreat during the 1990s and the decline in the Arctic Sea ice extent between 1979 and 2019 are majorly caused by human interruption and their insignificant activities. The below figure exhibits the rise in temperature in because of human interference at an extraordinary pace over the last 2000 years. The alterations in the temperature of the global surface relative to 1800-1900 are shown in the below figure.

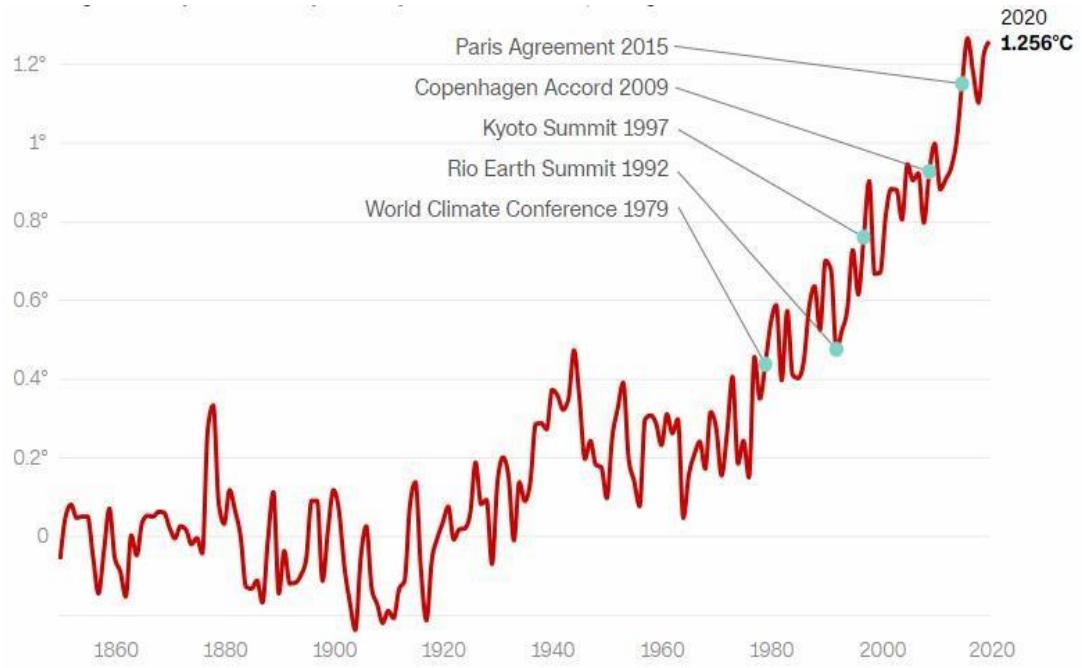


Source: Summary for Policymakers (SPM),IPPC Report 2022 https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf

The climate issue will intensify if global warming transcends 1.5 degrees Celsius. Fortunately, the 1.5-degree limit is entirely under our grip. The world, according to the UN study, by mid-century, should accomplish the objective of emanation, implying that greenhouse emissions are equivalent to the amount that separates from the atmosphere, and the global warming process might be terminated. A head scientist at Pennsylvania State University, Michael Mann, as he states it is empowering that delegates have perceived the need to accomplish more on greenhouse gases these past years, but what's more important is that all significant emitters have the structure that is rational with keeping the temperature below 1.5 degree Celsius. Since the first World Climate Conference in 1979, there have been various Worldwide Conferences to eliminate climate change. Significant approach

shifts have been uncommon even as warming has risen, despite a large number of climate commitments (Dewan, 2021).

The graph beneath represents the yearly worldwide temperature in degrees Celsius compared to pre-modern levels.



Note: Global surface temperatures were measured with a baseline of 1850-1900.
Source: Intergovernmental Panel on Climate Change (IPCC)
Graphic by John Keefe, CNN
Sourcelink:https://edition.cnn.com/2021/11/01/world/cop26-climate-leaders-summit-intl/index.html

Global Climate Change as a Multilateral Agenda

In the past 25 years, worldwide climate change issues remained the 4 most multilateral agenda. The issue of climate change has become the mainstream policy area for numerous governments throughout the globe after the Montreal Protocol. Accepting the gravity of the issue of climate change is a frontier for developed and underdeveloped countries alive because the impacts of climate change dart evil eyes on countries alike.

Including industrialized development countries less developed countries and larger developed countries that experienced the brutal consequences of climate change. Considering the severe consequences of global climate change the international

authorities have begun to exchange international talks about the issue under the supervision of the United Nation framework convention on climate change. The international community has been trying to identify sufficient solutions to mitigate climate change and its impacts.

To mitigate the evil consequences of global climate change, a list of developed and underdeveloped countries have formed collisions combating climate change threats. Like- minded countries in the region have started debating discussing and making agreements to counter the severe issues regarding climate change. The United States, England, Canada, Germany, France and Switzerland are the leading countries forming coalitions to fight againstclimate change in the list of developed countries.

However, developing countries like China Russia India, Brazil and South Africa have also made alliances to exchange potential strategies to overcome global climate change. Back in 1988, United Nation environment program and world metrological organization formed an authority of an intergovernmental panel on climate change to deal with the issue of formulating strategies on the internal level of countries. This authority provides technical and state-of-the-art scientific information worldwide to smaller institutions dealing with climate change. Since that time IPCC has given leading documents on climate change combating principles which are followed worldwide to solve concerns of climate change.

In 1997, protocol was accepted internationally. Kyoto Japan (KP) was the international pact. The agreement of the Kyoto Protocol came into power in 2005 when it was tied to the United Nations Framework Convention on Climate Change. The central aim of this agreement was to make burning objectives for European countries and 37 mainstream industrial countries to cut down greenhouse gas emissions. Carbon dioxide, methane, nitrous oxide, hydro chlorocarbons and sulphur hexoxide were also listed in the category of gases necessary to be decreased. The strategy utilized under the Kyoto protocol was highlighting the historical role of industrialization where greenhouse gases inversely affected the globe by contributing poisonous gases into the air and highlighted the moral responsibility for contributing to curbing climate change (IPCC, 2021).

Now there is a complex problem in the implementation of the Kyoto protocol because since its entry into force international climate change discussions have

transitioned to focus on deciding who should pay the most and what are the responsibilities imposed on traditional emitters and giant emerging technological countries who are contributing worse to the environment but are not part of the financing effects of climate change. Underdeveloped countries like Africa have no clear objectives and policies to battle against climate change butthey are the hardest hit by natural calamities.

According to a recent report by IPCC, the African region is the most vulnerable reason of the world to climatic changes because this region mainly depends on rain-fed agriculture production for its survival without adopting alternatives to promote agricultural activities on the land. In this context authorities of Africa were pledged to take sincere efforts to design strategies wrestling with impending climate change in Africa and other sensitive regions around the world because the preparations of the African region are fragile. It is estimated that tens of millions of Africans will get into the effects of climate change due to a shortage of water and the unfolding of malaria if risks and hazards are not tackled through solid policies and pledges.

Moreover, the UNFCCC gathered the entire international community in Bali Indonesia in 2007 to receive a comprehensive agreement on the methods and techniques to tackle the significant challenges of climate. Based on this comprehensive agreement the major participants of the conference approved the Bali Road map which was included in the Bali action plan as well. Summarizing BRM it can be set that it was a collection of decisions all the member states agreed to address climate change as the best strategy (Dodo, 2014).

To reach the agreements on the post-2012 Kyoto protocol United Nations held a conference on climate change in the branch of South Africa. The conclusion of this conference is known from the platform. Durban platform agreed to follow a road map for a legally binding international agreement to fight against climate change by 2015. There are many other commitments extracted from the Durban platform, but these commitments are not included inthis paper because they are beyond the scope of this paper.

After two and a half years of continuous discussions on December 11, 1997, in Kyoto Japan, the Kyoto protocol was approved. This protocol divided countries of the world into twain. The first category of countries is called Annex-1countries

which are mainly developed Nations and they usually contribute to curbing climate change. However, the second category is called Annex-2 that is consisting of developing countries.

The Montreal Protocol

Ozone is the layer which protects the harmful rays to reach the surface of the earth and help prevent human beings from fatal diseases like cancer. Depiction of the Ozone layer can put indanger the lives of humans and can damage crops and affect aquatic live due to the ultravioletradiations.

Montreal protocol in this regard is an international protocol between the states to minimizethe production of such substances which are causing the depletion of ozone layer. The Montreal protocol was agreed in 1987, while it came into force in 1989. Montreal protocol since its entrance into force has undergone nine revisions, including the ninth one in 2016 (Barners et al., 2021).

In 2016, parties agreed to the Kigali amendment made to the Montreal protocol. This amendment calls all the stakeholders to cut the production and use of HFCs by 80-85% by 2040s. This recent amendment entered into force in 2019. It is supposed to avoid excessive global warming by limiting the use of HFCs by the end of this century. However, few countries like USA, India and China didn't ratify, albeit the major producers of HFCs.

Montreal protocol is a success story with regard to climate change and the depletion of ozone layer. According to the official website of government of Canada, the result of this multilateral treaty is two-folded. In the first place the ozone hole is slowly and gradually recovering. It is estimated that the ozone layer will recover to its 1980 level in the period between 2050-2070 (Douglass & Newman, 2014). Secondly, this legally binding treaty makes states responsible to phase out production of various substances which are involved in the depletion of ozone layer. Kofi Annan, the former general secretary of the United Nations stated about the success of the Montreal protocol that perhaps Montreal protocol is the single most successful example to date of international agreement (Ozone Hole, n.d).

All UN member states are parties to the protocol, including Cook Islands, Niue, and Holy See, bringing the number of total parties to the agreement as 197. All the 197

parties to the agreement have ratified the original Montreal protocol. Most of the 197 parties have also ratifiedthe amendments made to the protocol. Currently 147 parties of the total 197 completely meet the criteria to comply with the control measure of the protocol.

Kyoto Protocol

The Kyoto protocol binds developed Nations to cut down greenhouse gas emissions. There is a difference between the 1992 convention and the Kyoto protocol. The difference is that the former cornered industrialized Nations to reduce screen house gas emissions while the latter forced them to do so (Gupta, n.d.).

When the 2008 to 2012 commitment period was designed is industrialized nation was provided whether a particular task related to emission reduction. The industrialized countries were given targets to reduce global greenhouse gas emissions by 5% down from the levels of 1990. Toyota protocol places a massive burden on well-developed Nations because of two reasons. The first reason is that they have contributed to greenhouse gas emissions in their development period. The second reason is that they are financially stable and can afford the cost of reducing emissions (United Nations, 1998).

The "Marrakesh Accords" are the complete Kyoto Protocol implementation laws that were agreed upon at the UNFCCC's COP in Marrakesh in 2001. It took a long time for the Kyoto Protocol to acquire political approval among states dedicated to cutting emissions, and it ultimately entered into force on February 16, 2005, when the majority of the world's governments agreed to it (Rao & Riahi, n.d., p. 2).

Past and Present Advancements of the Kyoto Climate Agreement

As of now, 192 nations have ratified/accepted/approved the Kyoto Protocol, except the United States and Canada. The US has never implemented the Kyoto Protocol, despite beinga signatory to it. The US has objections on the demand of this protocol, which is the reduction of greenhouse gas emissions by states. According to its Administration, US would not ratify, because doing so would be detrimental to the country's economy.

Moreover, US officials stated that the pact has not exerted sufficient pressure on developing nations to reduce emissions. The United States published its alternative

to the Kyoto Protocol in February 2002, proposing a strategy to reduce greenhouse gas intensity by eighteen (18) percent over a decade (Bush, 2002). Under this method, it has been proposed that by providing tax credits to businesses that use renewable energy sources, this strategy will stop the emission of half a billion metric tons of carbon dioxide.

Canada was the only country to do so; it approved the Agreement on February 16, 2005, but renounced it on December 15, 2012, and withdrew to become a member as of that date (UNFCCC, 2007). The Canadian government withdrew from the Kyoto Protocol to avoid paying Canadians $14 billion in fines for failing to meet the designated carbon reduction goals (The Guardian, 2011). Canada described the Kyoto Protocol as harsh and irresponsible, saying that the imposition of fines will result in the elimination of thousands of employment and the shifting of billions of dollars from Canadian taxpayers to foreign governments (Roarty, 2002).

The market-based emission-reduction measures under the Kyoto Protocol, particularly the Clean Development Mechanism (CDM), have surpassed expectations in terms of registered projects as well as enhanced awareness and production capabilities. The Kyoto Protocol expired on December 31, 2012, with no sign that it will be extended. In 2011 and 2012, lack of strong policy and regulatory signals harmed the carbon market. In all CDM projects, the Asia-Pacific part is responsible for 84.02 percent, followed by Latin America and the Caribbean with 12.84 percent. By accounting for 49.67% of projects registered under the CDM, China is the Kyoto Protocol's biggest beneficiary. India receives the second-highest beneficiary position.

Despite the best efforts of several market advocates, there were worries over the continuation of the Kyoto Protocol. Without carbon funding payments, the fundamental sustainability of the majority of previously registered CDM projects was anticipated to diminish, leading to the waste of billions of dollars invested in these projects. The parties to the UNFCCC and Kyoto Protocol decided to extend the Kyoto Protocol for an extra eight years commitment term during the UN Climate Change Conference in Doha, Qatar, in December 2012 (UNFCCC, n.d.).

The Paris Agreement

The human life is in jeopardy due to climate change. The intergovernmental board of

officialsnow believes that there is now undeniable evidence of climate change such as rising temperature, seas warming, glaciers and ice melting rapidly, greenhouse gas emissions reaching to that levels which could not see in the previous 800,000 years (IPCC, 2013). By absorbing 30 percent of human-caused CO2 emissions, the oceans have mitigated climate change, making them warmer and more.

In this regard, the Kyoto Protocol which was the first step towards achieving climate stability in 1997, unable to achieve the desired results of decreasing greenhouse gases in the atmosphere. Apart from this Protocol, if all states firmly follow the 2015 Paris Agreement. It seems difficult to meet with the objectives to keep global temperature below 2 degree Celsius(UNEP, 2010).

The new implementation plan which is proposed by Paris Agreement to the UNFCCC mainly focused on two basic goals. Firstly, is to limit the global temperature below 2°C, (preferably °C). Secondly, is to encourage the steps of states towards low-carbon development.

Importance of the Paris Agreement

The Paris Agreement offers a worldwide framework for averting terrible consequences of climate change by emphasizing on above two objectives. It is playing a key role in climate pacts because it is the only agreements which binding the states for joint cooperation. The implementation of the Paris Agreement requires economic and social adjustments based on the most current knowledge available. The Paris Accord is structured on a five-year cycle in which countries take more stringent climate action. 2020 was the deadline for governments to submit their climate action plans, known as nationally defined contributions (NDCs).

With the Paris Agreement, nations created a framework with more transparency (ETF). Beginning in 2024, countries must report honestly on their efforts and progress in climate change mitigation, adaptation measures, and financing granted or received through the ETF. It also creates global guidelines for the evaluation of given reports.

The data collected by the ETF will be used in a worldwide quarterly assessment of our progress toward our long-term climate goals. This will result in recommendations for governments to create more ambitious targets for the

subsequent cycle.

Countries committed to a more transparent framework under the Paris Agreement (ETF). Beginning in 2024, governments are required to report on their climate change mitigation and adaptation efforts, as well as the ETF funds they have contributed or received. In addition, it gives worldwide rules for the examination of submitted reports. The ETF's data will be utilized in a global quarterly assessment to see how far we've come in achieving our long- term climate goals. This will result in suggestions for governments to establish more ambitious goals for the subsequent cycle.

The Paris Agreement has been signed by over 190 nations, including the EU and its member states. On October 5, 2016, the EU formally adopted the agreement, permitting its implementation on November 4, 2016 (European Commission, n.d.). For the agreement to enter into effect, at least 55 nations representing at least 55 percent of global emissions must submit their instruments of ratification (European Commission, n.d.).

Outcome of COP21

The Paris Agreement was overwhelmingly accepted when COP21 President Laurent Fabius put up the gavel at Le Bourget after continuous struggle for two weeks and countless restless nights. The Paris conference on climate is composed of two treaties. First, it is the agreement of Paris in itself, which is a legally enforceable convention on climate change that includes 187 nations' promises to reduce emissions of greenhouse gases.

Second, the Paris Decision adopts the agreement, prepares for its implementation once it takes into effect, and provides a variety of less illicitly binding options to accelerate emissions reductions immediately. The Paris Agreement is crucial because it sets a new political path for world leaders. It signals the end of the Kyoto Protocol's sharp distinction between those countries which are industrially developed and those which are considered developing countries. It also highlights the start of a new age of a moon and collaborative will. It is believed that change in climate cannot be properly handled unless every stakeholder acts as per their capacities and available resources.

The following are a few of the most important articles of the agreement compared to the former agreement on climate change:

Article 02: The Target Temperature

This article maintains the intent to keep warming the global temperature underneath two degrees Celsius, while also attempting to maintain the temperature below 1.5 ℃. All the developed countries are required to set a limit of emission, including developing countries to achieve the desired result of 1.5 Celsius. The Paris Agreement also requests that the IPCC should prepare a special report on emission of greenhouse gases worldwide for the purpose ofdecline in the emission.

Article 04: Mitigation

Regarding the persistent emission reduction goal, the agreement is determined to peak global greenhouse gases rapidly as feasible and then reduce emissions rapidly such that all outflowof the GHG is balanced by "removal by sinks" in the second quarter of twenty-first century.In practice, to result in achieving net-zero emissions by 2050. Article 4 creates mandatory obligations for member states to make NDCs to undertake domestic actions for accomplishing this goal. Every year, all nations must submit new NDCs, with the expectation

that they would "reflect the highest possible ambition" and "show a development" from prior ones. However, it is crucial to highlight that implementing the NDCs is not a legally binding responsibility.

Article 7: Adaptation

A worldwide aim for adaptation should be the essential part of the Paris Agreement (UN, 2015b), President Zuma said in his leaders' day address. This aim must state that adaptation isa global duty that necessitates a global response. The global aim of adaptation in Article 7 was completely accomplished, focusing on raising adaptive capacity, building resilience, and lowering susceptibility to change in the climate. The Paris climate agreement in this regard is truly revolutionary to place adaptation and mitigation on an equal basis.

Article 08: Damage and loss

Loss and damage are the long-term losses and residual harm that persist after

mitigation and adaptation attempts. The Paris Agreement includes an article on loss and damage, making the Warsaw International Mechanism for Loss and Damage permanent. This Article is viewed as a significant policy statement, for all the small island states and those countries which are highly in danger due to the change in climate and their vulnerability to it. Notwithstanding according to the linked Paris Decision, the damage and loss provision doesn't imply or furnish a basis for any responsibility or reimbursement (United Nations, 2015), at the request of developed nations (led by the United States) to avoid climate restitution lawsuits arising from their role for the majority of greenhouse gases present in the air.

Article 09: Budgeting

Financial issues have always been part of the controversial problem, and COP21 faces the same issue as well. Developing countries fought for more financial aid for their efforts in Paris, while the developed nations persuade richer developing nations for funds contribution. Both were partially successful because Article 9 establishes a lawful duty on wealthy nations to continue giving finance for climate to mitigation and adaptation for the developing countries and, for the first time, welcomes other countries to give voluntary assistance. Many of the financial elements, on the other hand, were pushed to the decision wording, including the need that governments to commit to a new collective measurable target by 2025, building on the present aim of USD100 billion each year.

Article 13: Transparency

The Paris Agreement emphasizes openness in order to hold governments answerable. Article 13 compels all the stakeholders to report information on the emission of GHG as well as success in achieving and reaching the Paris Agreement (United Nations, 2015) their NDCs regularly, as well as to submit their reports for review. This review is conducted by international technical experts and is intended to be useful, non-intrusive, and non- punitive (United Nations, 2015). The transparency standards were a primary priority for the US and the EU, who wanted to ensure that China's pollution-reduction measures were scrutinized equally.

Article 14: Global inventory

According to an examination of 146 nations' national climate plans as of 1 October

2015, the NDCs announced at the time may limit global warming to roughly 2.7 degrees Celsius by 2100. A two-stage method was agreed upon to increase ambition over time, because the countries commitments aren't so ambitious to achieve the target of keeping the target under 2 degrees Celsius. The first stage was featured to facilitate a dialogue in 2018 to analyze nations'(United Nations, 2015) combined performance, which should assist in updating and improving specific national programs. Following that, the practice will be repeated every five years, with the first stock take after 2020 taking place in 2023.

The Glasgow Climate Pact

The entire community confronted a terrible pandemic crisis following the United Nations Framework Convention on Climate Change (UNFCCC) in Madrid 2019, also known as the COP 25. The COVID-19 epidemic has killed millions of people worldwide and disrupted many aspects of human life including the global economy. Governments all across the globe have taken actions to safeguard lives of billions of people including their ways of livelihood. However, change in climate has persisted, posing a hazard to life on Earth. The outbreak forced the cancellation of COP 26 in 2020. However, it was held in Glasgow, UK in 2021 in collaboration with Italy to rebuild a better and greener world (United Nations Climate Change Conference, 2021).

The prologue to the Glasgow Climate Pact lays forth underlying themes that run throughout the treaty. The prologue emphasizes the importance of long-term recovery from Covid-19 and solidarity with disadvantaged parties in global efforts to combat climate change. It emphasizes the significance of the World Leaders Summit, during which 120 heads of state and government set the tone for a successful COP26 (Dewan, 2021) by making a series of substantial promises to take necessary national action and cooperation to combat climate change.

The Preamble of the COP26 also reiterated the preservation of key tenets from the Paris Agreement and prior COPs, such as multilateralism and the significance of biodiversity and nature to change in global climate action, as well as human rights, indigenous peoples' human rights, local communities' rights, migrants' rights, children's rights, people with disabilities and people in precarious circumstances, gender equality, women's empowerment, and social equality (United Nations

Climate Change Conference, 2021b).

Goals of COP26

To Secure Global Net-Zero and Keep 1.5 Degrees Within Reach

According to the COP26 goals countries are encouraged to submit ambitious 2030 reduction in green house emission targets that become parallel with the targeted emissions reductions by the mid of this century. Countries all across the world are needed to struggle for achieving the following to meet these outstanding targets (UNFCCC, 2021):

1. Developed nations must swiftly discontinue production of power though the combustion of coal, and all the member countries to the agreement should own it not to build or fund any new setup of the production of energy through coal running power plants anywhere around the globe. Simultaneously, we must collaborate to give better assistance to developing nations in their efforts to provide clean energy to their populations.
2. Forests are essential for eliminating carbon from the atmosphere. If we are to fulfill our climate targets, we must safeguard them, yet they are currently being destroyed at the pace of a football field every few seconds. We urge governments to collaborate to assist farmers to achieve a better life while trees remain preserved.
3. By converting to zero-emission automobiles, vans, and trucks, we can improve our air quality and cut carbon emissions. In this regard by 2030, the UK will stop selling new petrol and diesel automobiles.
4. Investment in renewable innovation and clean technology must be encouraged. All countries in the international community will be able to turn a profit sooner.

Adapt to Protect Communities and Natural Habitats

Even as we cut emissions, the climate is changing, with disastrous consequences. Extreme weather has already wreaked havoc on people all across the world, exacerbated by climate change. Change is unavoidable, even as we strive relentlessly to minimize emissions. We know that the most vulnerable people are the ones who are most in danger from climate change and that they are also the ones who have

contributed the least to it. Before additional people lose their lives or their livelihoods, action to address this and create resilience is required.

For such resilience to create for the protection of communities all the stakeholders must collaborate with those states already affected by change in climate to:

1. To protect the loss of homes, livelihoods, and even lives of mankind, all countries should develop an "Adaptation Communication" by constructing defenses, warning systems, resilient infrastructure, and agribusiness.
2. Preserve and protect habitats, which can help to ensure sustainable farming and provide food for billions of people throughout the world.

Mobilize Finance

Rich countries must fulfill their vow to raise at least $100 billion dollars for the purpose of climate funding by 2020 to reach first two goals of the COP26 (United Nations Climate Change Conference, 2021a). Financial companies should play a key role, and we must collaborate to gather the huge amounts of money in private and public funds required to reacha global net zero.

Every corporation, financial institution, bank, insurance, and investor will need to alter to meet our climate targets. States must handle the growing clash of change in climate on the lives of citizens, and they must have the financial ability to do so. The scale and speed of the change compels all the stakeholders for all types of financing. For instance, the public finance is needed to build the infrastructure to transit to a greener and more climate resilient economy. On the other hand, private finance is to fund new technology and modern innovations, as well as to help the public sector for investments of trillions of dollars in climate investment.

Nations will need assistance to achieve these targeted goals:

1. Developing countries in particular will require assistance. Industrialized nations must keep their promise to raise at least $1 trillion in climate assistance annually to assist poor nations.
2. Countries must work together ahead of COP26 to unlock the trillions of dollars in private financing that will be required to propel nations to net zero by the middle of the century.

To achieve this, Climate change must be put into every investment decision.

3. To enable a shift to net-zero emissions all the financial systems needs not to resist to the efforts of climate change. All the stakeholders, including MNCs and other companies need to be open to the challenges and opportunities posed by the climate and change and the ambition of shifting to zero emission of GHG.

Work Together to Deliver

Only by working together, we will be able to overcome the challenges posed by the climate disaster. All the businesses should be ambitious about achieving zero emission. The opportunities provided should be grabbed while the challenges are needed to address by working together at all levels. This could be achieved through.

1. To finish the Paris Rulebook.
2. To Increase action to confront the climate calamity by bringing together governments, companies, and civil society. This is a pivotal period, and we must act now to achieve our objectives. Governments, businesses, and civil society organizations must collaborate with each other to develop consensus on how to power our homes and businesses, grow food, build infrastructure, and how to transport.

COP26's Outcomes

Climatic Empowerment Action and Youth

A new ten-year Glasgow work plan on Action for Climate Empowerment (ACE) was agreed upon, with an emphasis on improving climate education, training, public awareness, public involvement, public access to data, and international collaboration. This is indeed a new adaptable framework for improving ACE policy coherence, organization, cooperation, and assessment. The most noticeable result is the acknowledgment of the young as important change agents. It encourages national delegations to include youngsters. Following up on Italy's Youth4Climate program at Pre-COP, the cover decision establishes a permanent youth forum (United Nations Climate Change Conference, 2021b).

Gender Action Plan

The parties at the conference agreed on the Gender Action Plane for next year. This step will help to increase the operation of Gender Action Plans. They decided to enhance women's role in the management of climate action strategies and also equally participated in gender- responsive methods implementation.

Local Communities and Indigenous Peoples Platform

The LCIPP Facilitative Working Group agreed on a three-year work plan after the first two- year planning process for the Local Communities and Indigenous Peoples' Platform (LCIPP) was a success. The new work plan will maintain an emphasis on engagement capacity, information exchange, and climate policy, but will also include additional initiatives such as youth gatherings. Activities from the previous work plan, such as regional gatherings, will be included.

Ocean and Land

Parties committed to new action on the ocean in the United Nations climate process, including requesting United Nations climate agencies to include the ocean in their work and establishing an annual conversation on the ocean to boost action. Parties decided to take additional initiatives to improve the UN climate process's debate and action on land and climate change.

Institutional issues

The UNFCCC's budget for the next two years was approved, as was the commencement of the Compliance Committee for the Paris Agreement. Egypt has been confirmed as the host of COP27, and the United Arab Emirates has been confirmed as the host of COP28.

Marrakech Partnership and High-Level Champions

At COP26, the High-Level Champions unveiled their five-year strategy for a more ambitious Marrakech Partnership. This will increase interaction with member states, increase regional partners' activities, and continue to encourage resilience and financial action, particularly for emerging economies and poor nations. Parties praised the High-Level Champions' leadership and enhancements to the Marrakech Partnership. The UN Climate Change body's Marrakech Partnership provides a place

for engagement between Parties and enterprises, local governments, entrepreneurs, and civil society.

Nature

The final texts have made tremendous progress in acknowledging the importance of nature and ecosystems, as well as the link between climate change and biodiversity threats. There are a total of 11 allusions to nature themes in the COP and CMA resolutions, including more ocean and land action. This expands on the language used at COP25 and strives to raise worldwide understanding of the need of maintaining, conserving, and restoring the environment and ecosystems, especially forests and biodiversity, for climate change adaptation and mitigation.

The statement underlines the importance of nature in meeting the Paris Agreement's temperature target. Without nature, there is no realistic way to restrict global warming to 1.5 degrees Celsius, as research shows. To promote sustainable livelihoods for indigenous peoples and local communities, the text invites Parties to include nature and ecosystem preservation, conservation, and restoration in their national and local climate action plans.

Agenda 2030

All UN member nations ratified the 2030 Agenda and its 17 Sustainable Development Goals (SDGs) in 2015. It is frequently referred to as a "bold plan for mankind" and a "different way of doing" progress (UNDP, 2018). This agenda isn't a plan only for human beings living on the planet, but it includes the planet in itself. It includes the prosperity of the planet and its living organisms. The agenda 2030 seeks strength for universal peace and greater freedom.

The preamble of the 2030 Agenda recognizes the elimination of poverty in all its formats and dimensions as a vital global challenge faced by humankind. It also recognizes that the eradication of extreme poverty is an indispensable requirement for achieving sustainable development.

The preamble of the agenda 2030 demands all the stakeholders, including governmental and non-governmental organizations to act to their fullest to achieve all the desired goals, by implementing this plan of the agenda in its true spirit. The

preamble is clear and determined to take transformative and bold steps needed to shift the world on the path of sustainable development.

The 17 Sustainable Development Goals (SDGs) with 169 targets demonstrate the ambitiousness of the agenda. This universal agenda is optimistic about seeking states to build on the Millennium Development Goals and complete what they didn't achieve in the past (United Nations, 2016). The agenda is hopeful for a balanced and integrated approach to the three dimensions of sustainable development that is environmental, social, and economic.

The new agenda is parallel to the United Nations charter and is following principles of international law. It also incorporates other international conventions based on the Universal Declaration of Human Rights, international conventions on human rights, the Millennium Declaration, and the Outcome Agreement of the 2005 World Summit. It is also enhanced with treaties, such as Declaration on the Right to Development.

Means of Implementation of the 2030 Agenda

The main goal of the 2030 agenda is to establish a Global Partnership to promise its awareness. This Partnership will work as universal solidarity, particularly in most affecting areas and poor people. It will stimulate the involvement of the international stakeholders, such as civil societies, the United Nations system, the commercial sector, and other major players to achieve its targets and objectives.

Each country is responsible for its own social and economic growth. The progressive environmental strategy focuses on the tools that will be needed to achieve the goals and objectives. It recognizes that these will involve budgetary mobilization, capacity building, and the transfer of ecologically sound technology to developing nations on reasonable terms, particularly tax concessions and favorable conditions, as unanimously agreed upon (United Nations, 2016).

Goal 17's and each SDG's methods of implementation goals are critical to achieving our Action plan and are equally important to the other Set targets. The policies and agenda which are proposed in the third international meeting in Addis Ababa from July 13 to 16, 2015 (UN, 2015a) are crucial and helpful for accomplishing the sustainable development goals.

Thus, the 2030 s Agenda combine all the achievements of major UN meetings such as the Rio Declaration on Environment and Development, the World Summit on Sustainable Development, the World Summit for Social Development, the Beijing Platform for Action, and the United Nations Conference on Population and Development Program for action and many others to define the new agenda and established a progressive foundation for sustainable development. Furthermore, it also supports the results of these conventions: the Fourth UN Conference on Least Developed countries, the Second UN Conference on Landlocked Developing Countries, the Third International Conference on Small Island Developing States, and the Third UN World Conference on Disaster Risk Reduction.

In short, the 2030's Agenda reaffirms the achievements of all major UN conferences and meetings, which have helped to define the new Agenda and established a robust foundation for sustainable progress. The Rio Declaration on Environment and Development, the World Summit on Sustainable Development, the World Summit for Social Development, the International Conference on Population and Development Program of Action, the Beijing Platform for Action, and the United Nations Conference on Sustainable Development are just a few examples. It also affirms the importance of following up on the results of these conventions, such as the Fourth UN Conference on Least Developed Countries, the Third International Conference on Small Island Developing States, the Second UN Conference on Landlocked Developing Countries, and the Third UN World Conference on Disaster Risk Reduction.

EU's Involvement

The European Union is playing a leadership role in the efforts to combat climate change at the global level. It played a leading role in the Paris Agreement. In December 2020 it published its own NDCs report to decrease the emissions by 55 percent from 1990 to 2030.

By 2030, the EU member countries have agreed to a binding target of a net national decline in carbon emissions of at least 55 percent compared to 1990 (Hoof, 2021). As part of the EU 2030 climate and energy framework, initially, the EU promised under the Paris Agreement to Cut greenhouse gases by at least 40% by 2030 compared to 1990. That's why from 2018, all relevant EU rules for accomplishing

this goal have been applied.

To speed the execution of the COP26 decisions in 2022, the EU is reaching out to other nations. In a combined Team Europe approach, the EU and its member states will collaborate with friends across the world to solve the problems associated with such implementation and will partner up on the many COP26 sectorial initiatives and calls, according to the findings.

The EU Council emphasizes that in middle and low-income countries, the absence of at-scale funding for durable and equitable energy transitions remains a barrier to sustainable green development. As a result, the EU will continue to provide partners with a sustainable, green, and positive offer for the growth of climate-resilient energy, transportation, and digital infrastructure. Simultaneously, the EU is urging other advanced countries to implement their collective commitment of $100 billion per year by 2022, as well as international development banks and global financial institutions to play a critical role in galvanizing the corporate investors and shifting world's economic flows to green and sustainable investment portfolios (European Council, 2021).

Conclusion

Historically stating, climate change is now not a new issue faced by mankind. This issue has evolved by becoming part of the world forums. To curb climate change various ambitious policies have been formulated and implemented. But the growing population and increasing development and globalization have even added to the worseness of the challenge. Climate change causes rising temperatures, a rise in the number and severity of extreme weather events, rising oceans, burning fields, heat waves, and tsunamis. These consequences endanger our safety by affecting the food we eat, the water we drink, the air we breathe, and the weather conditions we face.

The ability of public health and safety systems to respond to or educate about these emerging threats, as well as characteristics such as an individual's attitude, age, gender, and financial situation, will determine the seriousness of these possible environmental dangers. The repercussions will vary based on where a person resides, how prone they are to health difficulties, how vulnerable they are to the effects of climate change, and how well they and their society can adjust to new

challenges.

Although people in impoverished countries are the most exposed to climate change concerns. Children, pregnant women, elderly persons, and those with low earners are in severe danger. Internationally, climate change causes serious health problems, air quality issues, and new and fatal types of diseases even in developed countries like the United States, the EU, China, India, and other developing and developed countries. Climate change as a burning issue of today's politics emphasizes its importance. It is the need of the time to educate the masses about the utmost importance of climate change. Numbers of international organizations are working on this cause to safeguard the coming generations and save the earth. Multiple treaties, protocols, and agreements are in place which highlights the importance of climate change. UN and other international and regional organizations have setup separate bodies and organs to deal with this issue.

CHAPTER No_02

ENVIRONMENTAL ACTIVISM AND POLICIES OF THE SCANDINAVIAN COUNTRIES

Introduction

With an immense increase in violation of the protocol of environmental security and climate protection, several responsible entities have taken the step to resist it. The world is gradually realizing that climate change is leading towards the intensity of weathers where heat waves, cyclones and floods have become the new normal. United Nations Environment Program (UNEP) along with other stakeholders is working on combating climate change and the disasters linked with it. In this regard, certain initiatives have been taken so far however; the problem of environmental degradation requires a multilateral approach where actors from every corner of the world must participate. Nevertheless, the Scandinavian region is comparatively tasking itself more enthusiastically against this problem. From domestic environmental policy making to international assistance, the Nordics are leading in combating the threat of climate change.

The threat of environmental degradation isn't a new phenomenon in the compass of world affairs however; the recent decades have revealed an alarming state. According to the data and statistics of UNEP, global temperature on average base has increased 0.85 degree Celsius in the last hundred years. Likewise, emission of carbon dioxide globally has increased almost 50 per cent in the last three decades (UNEP, 2017). To compress this risk of climate change, the UNEP has fixed a sustainable development goal with the title of Climate Action. Under this goal, the organization focuses on strengthening the capacity of countries to combat the climate disaster. Furthermore, it also argues the parties to include measures of climate security in the national policy (UNEP, 2017).

Therefore, this chapter focuses on the role of Scandinavian states in their commitment towards climate protection. It tends to analyze the cooperation and pledge of Scandinavian states with international community such as the UNEP on the front of climate change. Lastly, it also explains national policies of Nordic states

for the purpose to pinpoint and identify the policy grey points if any.

Indicating Climate Change in the Nordic

The impact of climate change on the ecosystems can be witnessed all over the world. In a comparative manner, the Polar Regions are more exposed to the threat of climate change. In the Nordic region specifically, the natural habitat and environment is under massive pressure. On one side, habitats of the animals are vanishing while on the other side, the human life is also receiving enormous threat that would have a huge impact on the economy and culture of the Homo Sapiens (Karlberg, 2019). Likewise, the unexpected heavier rainfall and higher level of water in the rivers is resulting in catastrophic flooding. These disasters obviously lead to unbearable burden on the infrastructures around the Nordic region, which for sure brings economic consequences.

In fact, no place in the world is safe from the threat of climate change. The UN chief Antonio Guterres clarified this statement in his address during the two weeks International Climate Conference in 2021. The secretary general warned every state around the world that no place is immune to the extreme weather events (Jordans & Parra, 2021). Nevertheless, these rapid changes in the climate are occurring more frequently in the northern Arctic Circle as comparedto the rest of the world. In the recent few years, the intensity of increase in temperature was twice in the Arctic than in the Southern parts. Hence, it is the reason that the Nordic states are deeply concerned towards the melting of glaciers and increase in sea levels in their respectiveterritories.

Furthermore, the Nordic region is surrounded by water as it has Baltic Sea in the south while Arctic Ocean flowing in the North. People in the Nordic region have relied on the water for transportation and sustenance since the days of the Vikings (Gundersen, 2020). The coastal regions of northern Europe are home to most of the Nordic population. Many people's quality of life is tied to their proximity to the ocean. Hazardous chemicals and ships are also threatening marine habitats. Efforts are being undertaken to lower the levels of nitrogen and phosphorus in the Baltic Sea because of an extremely huge algae bloom. Similarly, the tourism sector is also affected by changing patterns of climate. The shift in seasons, absence of snow on tourist spots and unexpected alteration in precipitation patterns has profoundly

downgraded the sector of tourism in the Nordic (Landauer et al., 2018).

However, beside the sectors of tourism, shipping, and economics, nature has been regarded as the primary victim of climate change in the Nordic. The growing seasons along with the Timing of spring has changed drastically thus marking significant impact on production ratios in the Nordic. The springs starts earlier in the south of the Nordic countries now, with minimum change of two weeks. Likewise, the fall season has postponed for two weeks in these regions. This change in growing seasons is also affecting the reliability of plant communities and different species (Norby & Luo, 2004, p. 281). Moreover, it is also providing the circumstances of survival and endurance to plant species of harmful impact such as the birch tree. The birch pollen season now begins earlier, according to research data. Birch pollen season has begun 10 to 26 days sooner than it did two decades ago in Denmark, Norway, and Iceland. Moreover, from 1979 to 1998 the yearly total of birch pollen climbed more than 230 percent (Rasmussen, 2002).

There is mounting evidence that human-caused climate change is also having a significant influence on the phonology of migratory bird species (Tøttrup et al., 2006). As a direct result of global warming, the date of the arrival of migrating birds has shifted across the world, including in the Nordic area. The percentage of birds that travel long distances depends on their location in relation to the equator. Less than ten percent of the birds that live near the equator migrate, whereas as much as eighty percent of the birds who live north of the polar circle fly south. The time of migration is shifting as a direct result of the changing climate. According to the findings of several studies, it appears that birds are arriving at their nesting areas earlier and earlier as the temperatures continue to rise in the Nordic region (Vähätalo et al., 2004).

Some alpine ecosystems in the Nordic nations have evolved over time under a climate regime that causes snow beds to remain on the ground for a longer period. Snow beds are developed in topographic depressions that collect a significant quantity of snow over the winter months and where the ultimate melt does not occur until a later stage in the growing season. These locations have been essential in the evolution of a specialized plant community. Therefore, the habitats of snow beds are preferred by certain plant species whereas a few plant species are really confined to

these environments. Some species, such as *Sibbaldia Procumbens* and *Oxyria Digyna,* are only found in certain settings because they require a temporary shelter from competition (Björk & Molau, 2007). These beds of late-melting snow thus provide this refuge. Because of this, the snow beds are a source of foster for a unique component of the alpine biodiversity. However, the studies show that species ideal for snow bed are suffering because of the earlier snowmelt and warmer weather in the Nordic region (Schöb et al., 2009).

Furthermore, animal species residing in arctic ice-covered seas are also at notable risk with climate change. Polar bear, a marine mammal species is one of the most sensitive specie to climate change. It is predicted that they will be lost globally from the areas where they could be commonly seen today. The polar bears are confined to areas where the continental shelves remain covered in ice. These areas provide good ground for multiple seals which are the main source of food for the polar bears. Nevertheless, with the tendency of earlier ice break in the area, the specie is going scarce. A study on female polar bears of the Nordic region showed that the body weight of the female polar bear has reduced from 300 kg to 220 kg in two decades. If this reduction in weight continued with such pace, the females will not be able to reproduce offspring in near future (Stirling & Parkinson, 2009). Likewise, the red arctic foxis another animal species directly in danger from climate change.

Nevertheless, the alarming situation of climate change has also resulted in disturbing the balance of ecosystems. On one side, it has reduced the number of species in the Nordic whereas on the other side, it has also resulted in the overproduction and forced interval of invasive alien species in the region. Invasive alien species are those living organisms which are unintentionally or intentionally introduced to spaces outside of their natural habitat. In Nordic region, the Pacific oyster and American comb Jelly are some of the marine alien species that have invaded the Nordic waters. The reason of their invasion is the rising temperature and warmer waters in their native regions. As a result of this invasion, the local species are going scarce for the fact that these alien species are overwhelmingly reproducing (Krajick, 2005).

Precisely, it could be stated that the issue of climate change has been touching the alarming indicators day by day in the Nordic region. It is a matter of fact that

Scandinavia is comparatively resisting the problem of environmental degradation; nevertheless soon the region will be no more in safe hands. Economy and tourism are in danger while the ecosystem is on edge of destruction. The native species population is declining while the alien species are entering into the region. Similarly, the snow beds are melting earlier thus causing disruption in natural division and plant species. Likewise, the weathers are changing with sudden interruptions which directly lead to change in patterns of seasons and raining. Hence, it is stated that climate change in the Nordic is no more a quip and requires serious attention. Fortunately, the Nordic countries are looking into this matter seriously and are eager to further exemplify cooperation internally as well as with international community.

The Nordic International Cooperation for Climate Protection

The 2013–2018 environmental action plan of the Nordic Council of Ministers' aimed to restrict emissions of greenhouse gas as a mean of contributing to achieve the goal of limiting temperature increases to less than 2 degrees Celsius (Bird, 2017, p. 11). Through this initiative, the region tended to limit the environmental and socioeconomic impacts that would otherwise be caused by this increase. The action plan emphasized the need of encouraging new funding techniques such as the Green Climate Fund, along with market-based systems that may boost cost-efficient carbon reductions. The earlier mentioned Green Climate Fund is one example of such market-based system.

Moreover, the Barents Council and the Arctic Council's work on climate change and its impact for northern ecosystems is given top priority in the Nordic nations' combined Nordic action plan. The Nordic nations have furthermore committed to assist the International Maritime Organization's efforts to minimize shipping radiations and to join a coordinated effort under the International Civil Aviation Organization's (ICAO) program to prevent emissions from increased air traffic flow beyond 2020 (Porsgaard, 2015). These decisions were taken in compliance with the Copenhagen Climate Accord, which was signed in December 2015. The Nordic countries also continued to press for a complete implementation of the Paris Agreement in wider international forums, including the conclusion of talks on a demanding work program by 2018.

Likewise, the Nordic nations aim to meet their international obligations and

demonstrate that reducing emissions in a sustainable and cost-effective manner is possible. To do this, they have taken the initiative to set their own lofty goals. The Nordics prioritize climate and environment at the vital political preference. In the Declaration on Nordic Carbon Neutrality in 2020, the prime ministers of the Nordic countries committed to be pursuing complete carbon neutrality. In addition, the Nordic Council of Ministers also adopted a new objective that was to make the Nordic region the worlds cleanest, most competitive and most sustainable region by 2030. This will be achieved by cooperative efforts to advance the prescribed agenda. Concerning the health of the seas, the Nordic countries have been firm supporters of the United Nations Environment Program (UNEP) leading an effective global response to the issue of marine debris and micro plastics. Likewise, the Nordic countries are collaborating with partners from all around the world to put the Paris Agreement into effect and support the efforts of the poorest and most vulnerable countries.

To show the level of international cooperation from the Nordic countries, Dr Niklas of the *New Climate Institute* states that the Nordics are the most active participants in curbing climate change both domestically and internationally (Hohne, 2021). Furthermore, a wide variety of joint efforts that are carried out collectively by nations, cities, businesses, non- governmental organizations, and private citizens are described in the Global Climate Action Agenda (GCAA) in which the Nordics participate sincerely. Non-state climate initiatives play a significant role in the GCAA in terms of quickly filling up the gaps in current climate action. After studying almost 300 international cooperative projects of GCAA throughout the world, it was revealed that Nordic stakeholders were among the most active contributors to these projects (Hohne, 2021). Nordic partners often take part in activities that are respected and acknowledged globally.

Likewise, to motivate and agitate the international community and nation states for environmental protection, the Nordic states have enabled the idea of 'environmental multilateralism'. Under this multilateral approach, the Nordic states collaborate and cooperate with the international community in the implementation of environmental policies, funding, and achievement of Sustainable Development Goals (SDG). In November 2020, under the banner of this multilateralism, the five Nordic states consulted with UNEP. The Executive Director of UNEP Inger Andersen praised this

initiative by stating that it was need of the hour to discuss the importance of a multilateral approach with our Nordic partners for the protection of our environment (UNEP, 2020). *"I humbly extend my gratitude to the Nordic countries for their international cooperation and leadership on the environment both in challenging times and comfort times"*, Ms. Inger added. Similarly, the Nordic participants such as the Danish Secretary from Ministry of Environment, Mr. Henrik Studsgaard pinpointed the partnership between these two entities which would be helpful in pushing action on environment related issues that will serve as international agenda in the future.

Lastly, the role of Scandinavian states in the development of international environmental policy from 1970 to 2000 depicts the enthusiasm of international cooperation for climate protection. With the growth of environmental activism, Sweden played its role in launching UN Conference on Human Environment. Similarly, Norway's high-profile involvement within the World Commission on Environment and Development set new trends in the area (Pugh, 2020). Thus, the Nordic region has been actively playing its part for international cooperation along with domestic action bodies given as under.

Systematic Climate Action Bodies in the Nordic Region

Prior to discussing the national climate policies of the Scandinavian states, it is essential to discuss the systematic organization of bodies in the Nordic which tends to resist climate change in a collective manner. For this purpose, the Nordic countries poll their resources to fight climate change through numerous joint structures and plans. Several action bodies have been created with the need to construct an effective and reliable response based upon the available resources and knowledge against the threat of climate change.

The Nordic Council of Ministers (NCM)

To begin with, the Nordic Council of Ministers, most often known as the NCM, is the official intergovernmental organization that oversees monitoring Nordic cooperation. The climate crisis has taken central stage in the "Nordic Solutions to Global Challenges," an enterprise of the prime ministers of the Nordic countries, which is being brought out through the Nordic Council of Ministers (Fredrik, 2007,

p. 17). Activities related to finding answers to climate change are one of the many topics covered under different themes such as the Cooperation on Nordic Solutions. The development of standards and methods for restructuring the subsidization system for fossil fuels (FFSR) is the primary focus of the work in this area (Bird, 2017, p. 25). The council also focuses on previous Nordic collaboration within the topic, along with investigating how progressive Nordic solutions in green technology, environmental economics, and environmental policy may be used and topped up internationally in the future.

The Nordic Development Fund (NDF)

Secondly, the Nordic Development Fund (NDF) performs the responsibility of providing funds in cash to assist low-revenue nations in Latin America, Africa, and Asia in immediatelyaddressing the origins and impacts of climate change. The funds are utilized through with co- financing collaboration with multilateral development banks (MDBs) and other financial organizations to support initiatives relating to climate change adaptation and mitigation. The contribution made by NDF is anywhere from three million to ten million Euros per undertaking. The capital for the NDF comes from the national budgets of the Nordic nations' respective development agencies. Approximately 860 million Euros are represented by the fund's assets currently (Bird, 2017, p. 25).

Beyond financing, the NDF also actively looks for areas and opportunities that meet the focusareas and where it sees the possibility of adding a significant value. These values could be added either in the form of partnership with other financiers or through proposals where it can take a larger or a more autonomous role. These opportunities must also correspond to the fact that NDF can add significant value beyond financing. It is possible to additionally take into consideration the possibility of resource mobilization and co-financing with other entities. The climatic consequences of projects financed by the NDF are subjected to scrutiny, and the NDF strives to make use of novel funding options, especially in connection to advances in the private sector (Upston-Hooper, 2017). The contributions made by NDF offer an essential power for the planning, development, and implementation of experimental and revolutionary climate change solutions that address both existing problems and unfamiliar problems as they arise.

The Nordic Environment Finance Corporation (NEFCO)

Thirdly, the NEFCO has been working in supporting initiatives outside of the Nordic region that have the potential to benefit the environment and climate of the Nordic countries as well as other regions. It has been 25 years that the organization has held the grip of environmental protection related projects. The focus of NEFCO's ecologically responsible funding is on small and medium-sized commercial and governmental initiatives (SMPs) with demonstration value. Many of the SMPs that NEFCO has funded over the years have a pioneering spirit, and many of them aim to evaluate the application of Nordic solutions – withthe option of up scaling – in local circumstances that are not prevalent in the Nordic region.

Today, a large amount of NEFCO's green funding is utilized to support the internationalization of Nordic environmental firms as well as the execution of public energy efficiency programs. Both activities result in environmental and climate benefits as well as favorable economic returns for the towns and businesses involved, allowing governments and businesses to expand and make more sustainable investments. In this regard, according to a press release of NEFCO, the organization has been extensively working in African continent with the hope of establishing 1.35 million green energy connections which will aid approximately six million people (Mulikita, 2022). Furthermore, annual surveys of the effects of NEFCO's financial assistance through the Nordic Project Fund, which is funded by the Nordic Council of Ministers, show that the medium-term effects of this internationalization Facility generates five hundred jobs per year, with 15% of those jobs being in the Nordic countries (Bird, 2017, p. 26).

The Nordic Working Group for Chemicals, Environment and Health (NKE)

Fourthly and lastly, the Nordic Working Group on Chemicals, Environment, and Health (NKE) and its subgroups oversee collaboration on chemical-related issues and their consequences for the environment. The Nordic countries work together on this issue for mutual betterment and progress. NKE's two main objectives are outlined in the revised Program for Nordic Cooperation on the Environment and Climate 2019–2024. These objectives include collaborating with other nations throughout the world and looking into the makeup and dangers of chemicals. NKE encourages collaboration among the local chemical industry throughout the region

and even on international level. The Group has developed networks of specialists (sub-groups) from national agencies throughout the Nordic countries during its existence. Influencing EU rules has been a regular manifestation of Nordic cooperation. Nevertheless, this collaboration also includes other international work areas, such as conventions, the Arctic environment, and testing procedures, all of which serve as the basis for EU legislation. The organization helps to lower the hazards of exposure to chemicals in products, as well as risks of its harmful exposure to both the environment and human health.

State Level Policy Measures in the Nordic Region

The Nordic countries' forward-thinking climate and energy policies are based on the idea that well-planned actions to cut greenhouse gas emissions may help mitigate the consequences of climate change while still promoting long-term economic growth and employment. This decoupling of emissions from economic development has already begun in the Nordic region. Renewable energy accounted for 37% of the region's total energy consumption in 2014, whereas fossil fuels accounted for just 54% of overall energy consumption. Furthermore, for the coming decades, strong emission reduction targets have been set, and each country has specified its own set of ambitious goals and aspirations for the year 2050.

By 2030, the European Union (EU) and Nordic countries have established a target of reducing greenhouse gas emissions by at least 40% compared to 1990 levels. In this regard, Denmark's objective is to have renewable energy provide all its energy, which would result in 75 percent reduction in greenhouse gas emissions. Likewise, Finland's objective, as part of a wider global effort, is to reduce emissions by an amount equal to 80% by 2050. The Icelandic government has set inspirational objectives for 2050 that include a reduction in net greenhousegas emissions of 50–75 percent. Norway has set a target of being carbon neutral by 2050. Furthermore, Sweden is also aiming toward a target of zero net greenhouse gases emissions in the environment by 2045 (Bird, 2017, p. 7).

The Norwegian Policy

The global governance regime on environmental and climatic change is at the cusp of a looming disaster. With the population bulge in Asia and Latin America and their

leaning towards the fossil fuels particularly Coal to meet their energy demands is gnawing at the 'Natural Capital' of the world and the biodiversity. International non-governmental organizations especially UNEF is benign on enforcing the protocols. Norway was the first country who pointed out the lacunae in the core responsibilities of the agency and ascertains to institute a surveillance mechanism to ensure an effective governance of the natural resources. Carbon markets under the aegis of Clean Development Mechanism were aimed to incentivize the reduction of emission to buoy the green oriented economy of the developing countries (Hall, 2020). However, with the lack of interests from the US and with the expiration of Kyoto protocol, the whole thing is in shambles.

Norway earned the agnomen 'Forgangsland' or pioneering country on the frontier of environmentalism. The status of exceptionalism is a major hiccup for the country to invest in the cross-cutting hybrid projects and promoting green economies instead of clinging to the innocuous and less effective international regimes and Carbon Capture Storage. Norway is anactive member of the Climate and Clean Air protocol since 2012. The strategy of Norway is two-fold i.e. to minimize the pollutant gases like Methane, CO2 and CFC in short terms and menacing the threat of greenhouse gases in the long term. On home front Norway passed the ambitious Climate Act 2017 to transition to a low emission society by 2050 (CCAC, 2017). The taxation system is integrated with the environmental protection regime. Breath-life campaign is a flagship project aim at transitioning to electric cars and Norway has achieved the status of the country with the most electric vehicles. As per the recommendations of the revised Gothenburg Protocol, Norway has already achieved the target of reduction of particulate matters by 30 percent from its 2005 level (CCAC, 2017).

Norway chaired the subcommittee on Climate prevention and responses and pledged to reduce emission from its cruise and ferry services into half by 2030. Also, the country has been conferred upon as the UNESCO protected fjords from cruise and ferry emissions. Norway supported the World Bank initiative of zero flaring by 2030 financially and in letter and spirits. Major oil conglomerates like Equinor pledged to institute a comprehensive mechanism of methane reduction. Nordic Council of Ministers incentivized the transition from old stove burners to modern green stoves to mitigate the methane emission. Oslo and Bergen already set the benchmark. Research and Development in Agriculture is financed to find cutting edge genetic

ways to breed cows and other live stocks to emit low methane (Norway Government, 2021).

Bilaterally, Norwegian environmental agency is working cogently with Chinese Research Academy on Environment to augment the awareness about low carbon emission and enhancing the ecosystem of knowledge about the climatic change and environmental conservation. Air quality measures and organic carbon emission are at the forefront in this bilateral co-operation. To achieve the measures expounded by the Montreal Protocol and Kigali Protocol, Norway and India have embarked on an ambitious refrigeration project. The project aims at altering the air conditioning and refrigeration eco system to an environment friendly one.

Norwegian Environment agency keeps track of the country pledges towards a more ecofriendly polity and publishes assessments regularly. By 2030, the country is prospecting to mitigate the Carbon, Methane and HFCs emissions and advocating consuming less red meat. Norway is emerging as a leader at the helms of the global climatic governance. Financially and morally Norway's standing is akin to a paragon on this frontier.

Climate Protection in Denmark

Denmark's climate act no 716 of June 2014 was abolished and replaced with a new climate act 965 passed and published in June 2020. The Climate Act of 2020 is the current primary policy guide of Denmark against climate change. According to the act, Denmark is committed to reduce greenhouse gases emissions up to 70% by 2030 as compared to the level of 1990 (Jorgensen, 2020). Furthermore, to achieve a climate neutral status for Denmark by 2050 is also a purpose of this act. Under the provisions of the Climate Act, Denmark must

Work actively for the attainment of Paris Accord's target of limiting global temperature rise to Degree Celsius.

The act chalks out several guiding principles for Danish government. Firstly, it describes climate change as a global problem thus urges Denmark to be a leading nation in international efforts in securing climate (Oksnebjerg, 2022). Secondly, it prescribes climate targets that are as cost effective as possible. The businesses, public finances, and employment must be secured alongside climate action. Thirdly, the actions taken to reduce greenhouse gases emission must result in visible

reductions domestically. Furthermore, reduction in Denmark must not relocate to other territories and it shall be ensured that it does not result in increment of emissions outside of the Denmark's borders.

The Minister for Climate, Energy and Utilities is primarily responsible for the implementation and enhancement of the act. Targets are set once every five years with a maximum 10-year perspective. Likewise, the new chalked targets must not be less ambitious than the previous targets. Moreover, the Danish Council on Climate Change will assist and guide the minister for setting national targets of climate. The council mainly consists of 1 chair and 8 members appointed for a four-year term (Jorgensen, 2020). The council annually makes proposals and suggestions to climate minister which then goes through the approval of the ministry. The council also evaluates the government's action based on the proposition that whether they are pragmatic enough to achieve the targets. Beside recommendations, the council also provides an update on international targets of Denmark. Lastly, the council contributes special attention to the encouragement and initiation of public debate on climate change.

Furthermore, Denmark's Minister for Climate, Energy and Utilities annually prepare a status and projection report on climate change. In this report, the ministry presents historic and projection emission of greenhouse gases both overall and sector-wise. Moreover, it also establishes a global report on international effect of climate activism in Denmark. Likewise, the report includes details of inter-state and intra-state collaboration of different stakeholders and the role of Denmark in it. It also graphically represents the response and trust of public in government's overall climate actions.

The Minister for Climate, Energy, and Utilities also presents a yearly performance report to the Danish Parliament. This report includes status of ongoing and completed national climate targets. Furthermore, the parliamentary report includes detail of recommendation by Council on Climate Change and the practical implementation of those recommendations by the ministry. The report also presents research work's progress on the development of new climate targets and the latest updates from the UN Climate Panel (Jorgensen, 2020).

Moreover, by 2050, the Danish government has promised to stop all oil and gas

discovery and instead invest the proceeds on retraining its workforce for positions in greener technologies. The country has announced plans to create a man-made island in the North Sea to house a sizable wind farm. Denmark and other adjacent countries would receive power from this project as well as energy storage (Yale, 2021). This will surely help the nation to achieve the climate targets and move towards a more sustainable green society.

Finland and Climate Change

The most significant element of Finland's comprehensive national climate policy is the Climate Change Act, which went into effect on June 1, 2015. Finland is obligated to reduce its greenhouse gas emissions by at least 80% by the year 2050 compared to 1990 levels under the terms of this Act. The Act also contains provisions for developing a planning system for climate policies and for monitoring the achievement of climate related objectives. The goal ofthis system is to make sure Finland achieves its objectives, including those related to mitigating the consequences of climate change as well as preparing for their repercussions (Muurman, 2020).

Finland's government, headed by Prime Minister Sanna Marin, has set a target for itself to become carbon neutral by 2035 and carbon negative within a few years of that. In accordancewith the present Climate Change Act, greenhouse gas emissions must be reduced by at least 80% by 2050 compared to the levels of 1990. Nevertheless, the Act will be amended timely so that the goals for carbon neutrality, also known as equilibrium between emissions and sinks, will be met by 2035.

Finland is expected to abide by the obligations and strategic decisions related to the climate and energy rules approved by the European Union. The European Union has pledged to reduce greenhouse gas emissions by 55 percent by 2030 as compared to 1990 emission levels. In line with the terms of the Paris Agreement, the European Union (EU) likewise also made this commitment to the UNFCCC Secretariat in the recent years. The transition to a climate-neutral region by 2050 is another long-term objective of the EU in this regard (Cifuentes-Faura, 2022). Beside a separate Climate and Energy strategy, Finland climate policy consists of the Long-Term and Medium-Term Climate Change Policy Plan.

The Medium-Term Climate Change Policy Plan outlines the steps to reduce greenhouse gas emissions brought on by human activity in the areas agriculture, waste management, and building-specific heating and cooling. Estimates of the trends in greenhouse gas emissions and their effects on policy decisions are also provided in the medium-term policy plan. The Ministry of the Environment oversees both the work on the medium-term climate change policy and the creation of administrative policies within its own domain. Just like Finland, it is standard procedure for any government to develop an energy and climate policy strategy. This strategy considers issues with the functioning of the energy markets, the maintenance of the energy industry, and supply and security of the carbon trading sectors. The organization in charge of doing the preliminary work required for it is the Ministry of Economic Affairs and Employment.

In contrast, the Long-term Climate Change Policy Plan of Finland will specify the long-term policy measures that will be put in place in both the emissions trading sector and the non- trading sector to achieve the objectives of the climate policy. A strategy must be made at leastonce every ten years, and the Ministry of Economic Affairs and Employment must oversee all work on it. Although the Energy and Climate Roadmap 2050 was completed in 2014, the first Long-Term Climate Change Policy Plan has not yet been produced under the Climate Change Act of 2015.

The evaluation of vulnerabilities and risk and creation of sector-specific programs is covered in the adaptation plan in line with the long-term policy. According to the act, the Ministry of Agriculture and Forestry in coordination must draw up an adaptation plan at least every ten years. Although, Finland has completed its National Climate Change Adaptation Plan 2022 in 2014, however, the first adaptation plan drafted specifically under the Climate Change Act of 2015 is still to be prepared (Liimatainen, 2014).

To monitor the Climate Change Act of Finland, an annual climate change report is created by the Ministry of the Environment as part of the monitoring process. In this report, Finland's emission reduction trends are discussed in depth, along with the implementation of emission reduction measures and their sufficiency considering the goals. The report is submitted to Parliament and serves as the basis for public

discourse on how to adapt to and lessen the consequences of climate change. Finland also reports on the development in reducing greenhouse gas emissions to the UNFCCC Secretariat as well as the European Commission. It is worth to mention that the Climate Change Act of 2015 has recently replaced with Climate Change Act of 2022 (Väänänen, 2022). Lastly, the Statistics Finland is responsible for the monitoring of emission of greenhouse gases, where it also drafts national reports on different measures taken in Finland regarding its climate policy.

Environmental Policy of Iceland

In January 20201, the Iceland officially joined Denmark, Sweden, Finland, and Norway in declaration on joint Nordic carbon neutrality during a summit in Helsinki (Sveinbjörnsson, 2019). This action was an example of implementation and validity of the Icelandic government's Action Plan on the Climate published initially in September 2018. The Plan was a turning point because it appeared to be the pioneering long-term comprehensive strategy that was fully financed, with a large extension in the cash that the government provided for essential initiatives in climate mitigation. Nevertheless, certain changes were made to the plan, and a revised version of the Climate Action Plan was published in June 2020.

The revised version included newly developed measures as well as an increase in financing. In addition to this, the revised plan included a considerably enhanced analysis to estimate the individual and societal mitigation gains that would result from the activities proposed. Overall, the 2020 Plan called for 48 different activities, 15 of which were brand new compared to the 2018 edition (Government of Iceland, 2020). These actions were designed to cut emissions of greenhouse gases and finance activities that may help in Carbon sequestration. The revised plan incorporates the feedback and ideas that were provided, as well as the findings that emerged from a consultation with various stakeholders and civil society members. There has been a strong focus placed on promptly putting procedures into action. For instance, out of 48 total activities mentioned in the 2020 plan, 28 actions have already been initiated.

For crucial climate action during the period of 2020–2024, a minimum of ISK 46 billion is anticipated to be invested under the above-mentioned plan. According to the experts, if the plan is followed strictly, Iceland would be able to decrease

emissions equivalent to one million tonnes of CO_2 by 2030 specifically in those sectors which fall under the domain of EU effort sharing regulation (Government of Iceland, 2020). Under the EU effort sharing regulation, Iceland is intended for a 29% reduction in emissions as compared to the levels of 2005. Nevertheless, under the newly implemented Action Plan, it would be able to raise and achieve its commitment up to the level of 35% approximately. In addition to it, the Icelandic government has already initiated some actions which will result in adding 4-5% further decrease in net emissions.

The Climate Action Plan is the principal factor that Iceland uses to meet its responsibility under the Paris Agreement, particularly its objectives for the reduction of carbon dioxide emissions in 2030. In addition to this, it is the principal instrument that Iceland uses to accomplish its self-proclaimed goal of being carbon neutral by the year 2040 (Sveinbjörnsson, 2019). The transition to the use of renewable energy in the transportation business is one of the primary areas of concentration, along with the intensification of activities in the forestry and land use industries. The Plan, on the other hand, considers all key sources and specifies climate mitigation strategies for the management of waste, energy, industry, chemicals, agriculture, and fisheries. The Plan is structured into sections that relate to the sources of emissions which are related to Iceland's commitments.

If the steps that are outlined in the Climate Action Plan lacked to be sustainable, either new measures will be implemented or more resources will be put into action. In addition, a wide variety of organizations in addition to the government at the national level, such as municipalities and the business sector, have launched measures to address climate change. It is anticipated that the implementation of these activities would lead to a decrease in Iceland's overall accounting for emissions of greenhouse gases. It is critical that projects of this kind be supported since steps taken just by governments will not be sufficient to properly combat climate change.

The United Nations' Sustainable Development Goals, which were globally approved in September 2015 and need the engagement and cooperation of a wide variety of stakeholders, are also taken into consideration in the Action Plan (Sengupta, 2015). In addition, as the pace of technological advancement quickens, we may anticipate the emergence of new methods of emission reduction that are both less expensive

and more effective. Therefore, there must be an ongoing process of development for the Climate Action Plan. The evaluation of activities will continue to be enhanced, a careful watch will be kept on the development of greenhouse gas emissions and carbon sequestration, and measures will be amended further.

In a similar manner, the Plan will be evaluated in terms of its impact on various income categories, as well as reviewed in terms of its costs and benefits, including the implications that actions would have on the macroeconomics. It is essential to make certain that climate action contributes to efforts to improve equity and equal rights. If it does so, it will surely assure a smooth and equitable transition. Lastly, the government is also working on projects that truly depict the technological solution to climate change. Carbon capture and storage (CCS) is one of those projects where the government is capturing CO_2 released from industrial facilities, injecting it into the nearby basalt rock and then waiting for it to become a stone (Veal, 2020).

The Swedish Climate Policy

The year of 2017 witnessed the implementation of Sweden's brand-new environmental policyframework. A climate act, climate targets, and a climate policy council are the three components that make up this framework. The framework's goal is to develop a clear and comprehensive climate policy that will provide long-term signals to the market and other stakeholders. With the support of a large majority of the political parties, the framework was approved by the Parliament and is designed to withstand changes in political sentiment. As part of Sweden's efforts to comply with the Paris Agreement, the climate policy framework is a significant climate reform. Precisely, the long-term goal for Sweden is to reach zero net emissions of greenhouse gases by the year 2045 at the very earliest (Naturvardsverket, 2018).

Firstly, on first of January 2018, the Climate Act entered into force (Karlsson, 2021). The act is based upon the main provision that climate policy of the government will be in line with the specified climate targets. Furthermore, it will also ensure the methods of implementation. Likewise, the government will be subjected to present a yearly climate report in the budget bill. It will make sure that collaboration must be created between the budget goals and climate goals.

Secondly, the climate targets of Sweden are divided into long-term targets and milestone targets. In the long term, the main target is to achieve zero net greenhouse gases emission by 2045. Similarly, the milestone targets include lowering emissions to 40% by 2020 as compared to the level of 1990, lowering emissions to 63% by 2030 as compared to 1990, and lowering emissions to 75% by 2040 as compared to 1990 (Naturvardsverket, 2018). The milestone targets will also help in the gradual achievement of long-term targets.

Thirdly and lastly, a Climate Policy Council is formed which will work as a supervision bodyto ensure that the government's policies are following the climate goals. The council is a collective team of different experts hailing from different disciplines which are tasked with evaluating the compatibility of governmental policy with climate goals. Members of the council have expertise in social sciences, behavioral sciences, and climate studies. The council submits a yearly progress report to the government that is based on assessment of its work carried out for current emission trends. Lastly, the council also tends to increase public awareness about climate change in the society (Banic & Givetash, 2020). A detailed overview of the Swedish Climate activism will be provided in the following chapter.

Conclusion

The issue of climate change is rapidly transforming the natural horizon with alarming arrivals. Although, the world has gradually learnt the lesson of environmental degradation, however, full scale environmental activism is still a dream to be followed. Like the rest of the world, the Nordic region is also facing severe catastrophes of climate change. From warmer weathers to early snow melting and from disturbed ecosystem and topography to the arrival of alien species, the Nordic region has begun to face the consequences rapidly. Nevertheless, the Nordic countries have been successfully drafting initiatives and implementing strategies drafted for the decarbonization of the region. Several environmental bodies have been formed with a set of goals and agendas to be achieved in the coming years. Moreover, the Nordic countries are also working on inter-region cooperation in this regard that may prove efficient and helpful to curb the problem internationally.

The issue of climate change is not solely problem of any specific region. As a matter of fact, the Nordic countries are actively working in the lead for the protection of

environment; however, it will only bring minimum results. For instance, all governments, although, pledged during the Paris climate conference to keep the average global temperature rise far below 2 degrees Celsius. However, even if every country meets the goal, they have set for itself, the average world temperature will increase by 3 to 4 degrees Celsius by the year 2100 (United Nations, 2017). The Nordic countries may try to reduce this disparity by increasing the amount of abatement they carry out. Nevertheless, when one examines the existing and expected ratio of greenhouse gas emissions among nations, it seems naïve to believe that greater emission reductions in the Nordic countries should have any direct substantial impact on the levels of global temperature.

First, the share of global emissions attributed to industrialized nations is minimum comparatively. Without the involvement of poor nations who add a bale of amount to the emissions, halting climate change would be challenging, if not impossible. It would be a waste of time in this manner even if the developed countries such as the US, Scandinavia and China take extra reasonable measures. Second, carbon leakage is a situation where greater greenhouse gas emission reduction efforts in one country may result in higher levels of those emissions in other countries. Bohm was one of the first to note that other countries would use more fossil fuels if some countries reduced their use of fossil fuels to reduce their greenhouse gases emissions (Bohm, 1993). If certain countries did this, the price of fossil fuels would decrease. Additionally, the implementation of a region's stricter than average climate policy may attract enterprises that produce a lot of emissions to relocate to regions with softer climate regulations. Therefore, many people believe that reducing emissions in one country will increase emissions in other nations.

To conclude, climate change is a global problem that requires global solution. Multilateralism is the only way to success in these circumstances. The state level policies implemented in the Nordic countries thus require the collaboration of global state as well as non-state actors. Likewise, the existing national policies must be timely overviewed, and any necessary amendment should be carried out frequently. Lastly, eliminating climate change should be kept on a priority list for the fact that state’s economic, social, and political progress is linked with a safe, clean, and green world.

CHAPTER No_03

CLIMATE CHANGE POLICIES & ENVIRONMENTAL LAWS IN SWEDEN

Introduction

After the United Nations' Intergovernmental Panel on Climate Change (IPCC) reported that global warming had reached 0.7 degrees Celsius during the preceding 100 years, Sweden realized it needed to take action to prepare for the effects of climate change. It is quite likely that human activity is considerably to blame for the fact that the rate of warming during the past 50 years has been roughly twice as rapid as it was during the previous 100 years. It is projected that the world's average temperature would rise by an additional 1.8 to 4.0 degrees Celsius by the end of the century, compared to 1990 levels. If global emissions are drasticallyreduced, perhaps future temperature increases can be contained. But it's likely that temperatures will continue to rise.

In a number of different places, the risk of natural disasters like floods, landslides, and erosion is rising to the point where more comprehensive attempts for preventative measures are warranted. Additionally, there is a chance that the Baltic Sea ecosystems might see severechanges. Sweden has had many major floods during the past several years. The floods in Arvika in 2000 and the floods at Lake Vanern in 2000/2001 are two important examples.

Buildings, roads, and railroads in particular are negatively impacted by the increased risk of floods. Other forms of infrastructure, such as those supporting industry and agriculture, mightalso be at jeopardy. Water sources that are contaminated or water pipelines that have breaks in them both have a chance of disrupting the supply of potable water. If electrical substations are damaged, it is possible for power disruptions to last for a lot longer (Anon 2007).

A key tool in Sweden's defense against the consequences of climate change is the Swedish Environmental Code. The application of the law is intended to aid in the nation's solid improvement. It is a body of framework legislation that includes all of

the main requirements relating to environmental protection. Therefore, Environmental Code will guarantee that both the present and next generations will leave behind a stable and well-maintained natural environment (Anon n.d.). The creation of a climate policy framework is another move that the Swedish government has taken to influence. However, the fulfillment of the Paris Agreement in Sweden is outlined in this framework, which represents the most significant climate reform in Sweden's history. According to this framework, Sweden must reduce zero net emissions of greenhouse gases into the environment by the year 2045 (The SwedishClimate Policy Framework, n.d).

In Sweden, there has been a pressing need for time to raise the knowledge of younger people about global issues like climate change. Presently, Greta Thunberg is considered as a principal participant in the youth led environmental activism in Sweden.

One of the first notable Swedish efforts was the "Front against environmental degradation" campaign, which was launched by the insurance company Folksam in 1968. However, as partof a national competition that was arranged by the company, which had close ties to the social democratic party, young people were given the task of recording environmental issues that were occurring in their own cities. Therefore, these inventories served as the foundation for a series of public hearings in 1969, during which the younger generation placed the more senior politicians, public servants, and business executives up against the wall. These hearings were deemed a public success with an engaged audience (Lundberg and Heidenblad2021).

The overall progress of the Sweden in challenging climate change is admirable because oftheir environmental laws, policies and youth activism in this regard.

Environmental Laws & Policy Making in Sweden

The organizational structure of Sweden's environment policy may be compared to a large family. This core is surrounded by agencies under other ministries and with various missions,but which are compelled by law to consider the environment.

To get knowledge of contemporary Swedish environmental legislation, it is important to first examine its historical development. Environmental law in Sweden has evolved from ordinarycivil law ideas. Such concepts sometimes comprised the

fundamental legal foundation for managing concerns emerging from the usage of neighboring properties, such as the utilization of natural resources (trees, animals and water). Historically, courts implemented such concepts as case law, but they were rarely codified as statutes. The environmental legislation has initiated with the industrialization process of Sweden in the late 19th century. Moreover, the evolution of environmental regulation in Sweden was greatly influenced by thenew challenges that industrialization presented to society.

Sweden is commonly cited as a leader in the building of an administrative environmental policy framework, as well as in the tackling of environmental and climatic challenges. Themajor reason why Sweden consistently places so high on the yearly Environmental Performance Index is because it has relatively low levels of greenhouse gas emissions Produced by each inhabitant. The Swedish Environmental Protection Agency (EPA) wasestablished as early as 1967, which is responsible for the protection of the environment. Additionally, Sweden has long been a pioneer in the establishment of environmental policy structures and tools. It is clear that Sweden is making an attempt to be a pioneer in the environmental field on an international scale as well. Since the first United Nations Conference on Human Environment was held in Stockholm in 1972, Sweden has sought to take on the responsibilities of both a driver and a mediator in the global debates concerning the environment and climate (Matti, Petersson, and Söderberg 2021).

Environmental Protection Agency (EPA)

In Sweden, the Swedish Environmental Protection Agency is the government body that is in charge of developing and enforcing environmental regulations. The Swedish Ministry of the Environment is the organization's reporting entity. It was established in 1967. However, it is responsible for carrying out assignments for the Swedish government that are connected to environmental issues in Sweden, the EU, and globally. Its primary responsibilities include making recommendations to the Swedish government about environmental policy and law, as well as ensuring that environmental policy choices are carried out as intended.

Areas of Responsibilities

The Environmental Protection Agency also advises other national agencies, as well as regional and municipal authorities, on environmental and regulatory matters. It

keeps track of the status of the environment and reports on it. However, EPA's responsibilities also include sponsoring environmental research, promoting sustainable waste management, developing environmental policy tools, including environmental laws, and engaging multilaterally and bilaterally with other states (Anon 2007a).

Ministry of Environment

The Ministry of the Environment is an official Sweden government ministry which is in charge of the country's environmental policies including water and oceans, biological variety, chemicals, climate change, ecological issues, environmental laws, and quality standards.

Stockholm serves as the location of the ministry offices. The Ministry of the Environment and Energy was established in 1987. Previously, the Ministry of Agriculture handled environmental problems, while the Ministry of Industry handled energy-related issues. But in 1990, the Ministry of the Environment's shortened term was adopted.

The Minister for Climate and the Environment are in charge of the ministry and are chosen by the Prime Minister. A State Secretary is responsible for overseeing activities below the cabinet level. In addition to the minister, who works closely with them on policy matters, the ministry also includes a press secretary and political advisers. The Ministry of the Environment, on the other hand, engages about 160 people, mostly spread out across its eight divisions and secretariats. Additionally, some 40 workers are serving on committees of investigation within the supervision of the Ministry (Regeringskansliet 2014).

Other Key Organizations

The National Franchise Board for Environmental Protection, central administrative agencies, county administrations, and municipalities are other important organizations which are also engaged in the implementation of environmental regulations in Sweden. Though, applications for permits for significant sources are reviewed by the National Franchise Board for Environment Protection. It is much organized. The Board, together with County Administrations, handles disputes involving the Environment Protection Act and serves as the body responsible for awarding licenses and permits for important facilities. However, the central

administrative agencies offer feedback on problems relating to planning, location, operation, occupational health and safety, product dangers, effects to the environment, etc. from the standpoint of the relevant stakeholders. Counties are in charge of a various aspects of environmental management. In short, the local municipalities are the ones responsible for the protection of the natural environment.

Historical Overview of Environmental Policies

The history of environmental legislation in Sweden dates back to the 1960s. The first important piece of legislation approved in 1964 was the Nature Conservation Act. The Environmental Protection Agency was founded in 1967. However, the Environmental Advisory Committee was founded in 1968 to advise the government on environmental matters. In 1968, the government also enacted legislation restricting the sulphur level of heavy fuel oil. The Environmental Protection Act was enacted in 1969. Together with the 1973 Act on Products Hazardous to Health and the Environment, this is the most important Swedish law for the preservation of the environment.

The Nature Conversancy Act (1964)

The Nature Conservancy Act detailed the essential principles and philosophies that must be adhered to in order to safeguard Sweden's natural resources, especially its flora and fauna. However, it includes regulations aiming at protecting the countryside and providing opportunities for the general public to enjoy nature, as well as measures for the establishmentof national parks. This Act acknowledged that the natural environment is a resource that should be safeguarded and conserved since it is important and worthy of such regard.

Although, the Act specified that both national and regional authorities are responsible for conserving areas of natural importance and for preserving them as national parks, natural areas, and conservation areas. The Act also stipulates that both national and regional authorities must designate places of natural importance as protected. In addition, the Act contains provisions that preserve endangered animals, ban outdoor advertising, and prohibitlittering. Under the Name of Conservancy Act, the competent authority is the county administration. With the approval of the National legislature, the government must reserve land for the development of national parks.

Environmental Protection Act (1969)

The Environment Protection Act, which took effect in 1969, regulates activities that are dangerous to the environment. However, it created the legal framework for the implementation of environmental protection in Sweden. The Environmental Protection Act significantly enhanced the state's involvement in environmental protection. It comprised, among other things, a permission system for ecologically hazardous operations. This permit system was based on an integrated strategy that intended to regulate in a single permit essentially all negative environmental consequences resulting from an activity. The National Licensing Board was designed to administer licenses for activities, such as industries, with severe negative environmental repercussions. In exchange for needing to seek for permission, the industries were protected from additional limitations from the government so far as they maintained compliance with the permit's requirements.

The Environmental Protection Act's appendix includes a list of ecologically hazardous activities for which permits or inspections are required. Additionally, the appendix explains the responsible authorities. The appendix or annex classifies more than 250 operations in several economic sectors (such as agriculture, mining, manufacturing, public administration,and other services) into A, B, and C categories. At first, category A goods must acquire a permission from the National Franchise Board for Environmental Protection, category B things must receive a permit from the county administrative board, whereas category C items must submit a report to the municipal environment and health committee (Environmental Legislation and the, 1995).

The Stockholm Conference 1972

In 1968, Sweden proposed to the United Nations Economic and Social Council (ECOSOC) the creation of a conference centered on human environmental interconnections. The ECOSOC passed a resolution supporting the concept. In 1969, General Assembly Resolution2398 called for the convening of a conference in 1972 and mandated a series of reports from the UN secretary-general recommending that the conference focus on "stimulating and providing guidelines for action by national governments and international organizations" regarding environmental problems.

However, the summit was also viewed as a chance for governments to establish themselves as environmental pioneers. In this context, Nordic parliamentarians and politicians were inspired to create a convention that, on the one hand, would be based on the principle of non-discrimination and, on the other hand, might serve as a "useful model for more comprehensive international accords." On the surface, such a conference would not only portray the Nordic nations as environmental leaders, but it was also anticipated that it would serve as a model for similar gatherings outside of Scandinavia.

This conference led to the creation of Nordic Environmental Protection Convention which is signed on 19th Feb, 1974. The convention established an administrative and judicial mechanism for transboundary pollution. It was an international agreement signed by Sweden, Denmark, Finland, and Norway. Overall, Sweden played a vital role in this environmental protection steps (The 1974 Nordic Environmental Protection Convention).

Chemical, Waste, Ecological & Agricultural Policy

New environmental challenges prompted the introduction of environmental regulation in Sweden. With a few exceptions, each concern resulted in the introduction of unique laws. As new environmental issues continually arose, it became increasingly apparent that this strategywas ineffective. Nonetheless, Sweden is still attempting to adopt effective environmental legislation.

Since the 1980s, Sweden has adhered to the environmental protection, the substitution principle, the waste hierarchy, and producer responsibility in the management of chemical products. Sweden has been particularly active in removing hazardous compounds from goods and garbage, a field of increasing importance since products have become a major source of hazardous contamination. However, Sweden focuses on the role of producers in chemical management and, more recently, in the ecocycle policy, a method that provides producers with extensive implementation freedom and general accountability. Sweden has been a champion among OECD nations in the management of chemical products. The industry has a significant amount of responsibility for evaluating and classifying compounds, as well as eliminating dangerous substances when safer alternatives are available. In addition, Sweden has created several substance-specific risk reduction initiatives,

some of which aim for total testing and implementation.

The focus of waste management policy has been on municipal garbage, not industrial waste. In Sweden, recycling rates for certain solid waste, such as paper/cardboard and aluminum cans, are extremely high. Therefore to promote recycling and ensure proper disposal, municipalities have created separate collection systems for residential waste, including hazardous waste separation. Energy from waste, in the form of landfill gas and heat from burning, is extensively employed and accounts for a significant portion of the energy supply. Since the 1980s, Sweden has improved its waste disposal practices; for instance, air toxic emissions from incinerators have decreased. However, additional effort is required to enhance smaller disposal sites and waste practices. Legal frameworks for hazardous waste management and trash export and import is improved to some extent. In 1988, Sweden prohibited the export of hazardous waste to non-OECD states.

The ecocycle policy of 1993 in Sweden aims to provide a comprehensive framework for the management of products and trash in order to reduce the consumption of natural resources and the subsequent environmental effect. In fact, the policy emphasizes reuse and recycling, as well as the reduction of waste quantity and toxicity.

In early 1980s, Sweden implemented a variety of regulations to mitigate the negative impacts of modern agriculture on the environment, human health, and animal welfare, and to preserve the agricultural landscape. Its environmental goals for agriculture are generally ambitious and, because of the high level of environmental consciousness among farmers, have the sector's support. The aim of reducing the total usage of commercial fertilizer by 10 percent by

1992 has been achieved. Progress has been made toward the goal of converting 10 percent of arable land to organic farming, and the initiative to preserve 600,000 hectares of farmland with considerable habitat value is on track to meet its 1998 goal, as 70 percent of the area is already covered by management agreements. Although in 1990s, Sweden dramatically raised agricultural environmental expenditures (Sweden-OECD).

The Swedish Environmental Code (1998)

Recent economic slump and inclusion into the European Union have shaped Sweden's economic and environmental decision-making affected. The ultimate goals of Sweden's environmental policy are to safeguard human health, preserve biological variety, guarantee the sustainable use of natural resources, and preserve natural and cultural landscapes. Today's environmental policies of the Sweden are largely centered on the following topics: climate change, ozone layer depletion, acidification, and ground-level ozone, urban environmental quality, metals and persistent organic compounds, management of land and water resources, protection of nature, ecocycle and waste management, chemical and nuclear safety.

The Environmental Code is the first comprehensive piece of environmental law issued in 1998 by Sweden. Its regulations pertain to land and water management, nature conservation, the preservation of plant and animal species, ecologically hazardous activities and health protection, water operations, genetic engineering, chemical products, and garbage. The Code incorporates 15 prior Acts that were revoked on January 1, 1999, when it went into effect.

Objectives of the Environmental Code

The Code seeks to advance sustainable development. Among other things, its provisions address land and water management, environmental protection, the preservation of wildlife, water operations, genetic engineering, chemical goods, and waste management.

All individuals and operators who engage in activities or take actions that may have an influence on the achievement of the Code's objectives are subject to its provisions. Therefore,the Code is applicable to any actions that may have an adverse effect on human health or the environment.

In 1999, the Swedish Parliament approved a set of national environmental goals to enhance the Code. These environmental goals are divided into three categories: generational goals, environmental quality objectives, and milestone targets. The environmental objectives serve as a guide for the government, its agencies, and other parties while implementingenvironmental legislation.

Every level of society should be guided by the generational goal while taking environmental action. However, it outlines the kinds of adjustments that must be made within a single generation in order to achieve the environmental quality goals. It also focuses environmental policy on ecosystem recovery, biodiversity conservation, and the preservation of the natural and cultural environment, human health protection, and the establishment of safe material cycles, achieving a sustainable use of natural resources and energy, and promoting sustainable consumption patterns.

The condition of the Swedish environment that environmental action and measures are to achieve is described by fifteen environmental quality targets. These environmental qualityobjectives goals are;

1. Clean air
2. High-quality groundwater
3. Sustainable lakes and watercourses
4. Flourishing wetlands
5. A balanced marine environment and sustainable coasts and archipelagos
6. No Eutrophication
7. Natural acidification only
8. Sustainable forests
9. A varied agricultural landscape
10. A magnificent mountain landscape
11. A good built environment
12. A non-toxic environment
13. A safe radiation environment
14. A protective ozone layer
15. Limitation of climate change

The environmental quality objectives provide direction for achieving the goals set forth in theCode.

The government sets milestone targets in important sectors to help progress toward the generational goal and the environmental quality objectives. In order to achieve the generational goal and the environmental quality objectives, they are intended to outline the societal changes that must take place.

Since it became effective in 1999, the Code has undergone consistent revisions and adjustments ever since it was first written. This indicates the increased relevance of environmental considerations in governing and administration as well as the fast growth of these considerations. These changes are illustrative of the fact that the creation of new environmental laws and the refinement of existing ones is a process that is ongoing and will take a significant amount of time (The Swedish Environmental Code, 2000).

Environmental Policies of Sweden from 2000 Onwards

Sweden has established itself as one of the more environmentally enlightened nations. In 2000, a landfill tax will be implemented. However, Sweden participates in the Fund for Greenhouse Gas Emissions of the World Bank. The Ministry of Industry, Employment, and Communications anticipates purchasing between 1 - 2 million tonnes of carbon dioxide. The Riksdag is presented with a Government Bill on a Chemical Strategy to Achieve "A Non- Toxic Environment." Establishment of a Government Commission on Producer Responsibility has occurred in the same year. The government enters into an agreement with the automotive sector about the development of green (alternative-fuel) automobiles. As a consequence of an agreement between the Social Democratic Government, the Left Party, and the Green Party, a green tax shift policy is launched. Over a decade, the approach is projected to cost a total of 30 billion Swedish Krona (2001–2010). Similarly, Sodersen, Sweden's 27th National Park is inaugurated in the consecutive year and the park encompasses 1,600 hectares and is home to a rare virgin deciduous forest, a vast array of flora and fauna, and virgin waterways.

The year 2001 marks the beginning of Sweden's six-month presidency of the Council of the European Union. During Sweden's EU Presidency, the European Council adopts a Strategy for Sustainable Development during its Gothenburg

summit. Environmental concerns are oneof the Swedish government's top priorities. Nonetheless, the government presents its second national report on implementation of the Biodiversity Convention. Similarly, the Swedish Board of Agriculture, the County Administration Boards, the Federation of Swedish Farmers, and numerous agri-business organizations start a cooperative campaign. The "Focus on Nutrients" effort is designed to prevent nutrient losses from agriculture to air and water. In brief, Swedish Species Information Centre is established.

In 2002, Sweden ratified the Montreal Protocol's from 1999 regarding chemicals that destroy the ozone layer. In the same year, the Government submits a Bill on infrastructure for a long- term, sustainable transportation system to the Riksdag. Additionally, the government chooses to re-evaluate the costs associated with exporting fairways in an effort to make them more affordable. The Stockholm Convention on Persistent Organic Pollutants is ratified by Sweden. To examine the outcomes of the World Summit on Sustainable Development in Johannesburg, a large stakeholder conference on sustainable development, is hosted in Västeras. Around 700 participants representing governments, municipalities, NGOs, enterprises, and industry attended the conference (Chronology of major environmental eventsin Sweden, 2003).

The Swedish government claims that as a result of its regulations, just 1% of solid waste is now disposed of in landfills and that the other 99% is recycled or converted into biogas. However, Sweden has banned the sale of plastic drink bottles that don't adhere to an authorized recycling scheme since 2005. Creating a pilot project among its Baltic neighbors,Sweden was a leader among the Baltic countries in 2009 when it chaired over the EU. The Swedish Agency for Marine and Water Management was established in 2011 to address the problem of water pollution in Sweden. A large number of Swedish corporations engage in socially conscious business practices, and firms like IKEA are recognized as environmental pioneers. Sweden and the United States collaborate closely on environmental sustainability and clean technology. The nation is moving swiftly in the direction of a clean future. Sweden,one of the world's pioneers in clean-tech, is also spreading its clean ethos throughout the globe by combining active citizen involvement with global solidarity. The Swedish government recently allocated $180 million for clean-tech initiatives as a result of this (Smith, 2015).

Sweden in Kyoto Protocol

In Sweden, the climate has long been viewed as a primary concern in terms of policy. Sweden previously adopted its first set of climate policy goals in 1988. Since the beginning of the 1990s, the majority of the policy tools used in Swedish climate policy have been adopted and progressively strengthened. Some of the policy tools that have an influence on greenhouse gas emissions were developed in part to achieve other goals. The fact that Sweden has accepted both the Kyoto Protocol and the UN Framework Convention on Climate Change is crucial to the approach. In 2002, when the Swedish parliament opted to ratify the Kyoto Protocol, Sweden adopted an internationally-binding commitment to ensure that the country's average greenhouse gas emissions from 2008 to 2012 do not exceed 104% of the level in 1990.

Concurrently, the present Swedish climate plan was implemented. This strategy contains both short-term and long-term national objectives. The short-term national climate goal for Sweden is to reduce greenhouse gas emissions by at least four percent between 2008 and 2012 compared to 1990 levels. This objective should be reached without considering compensation for carbon sink removals or flexible procedures. Sweden's long-term climate goal is to stabilize the concentration of the six greenhouse gases listed in the Kyoto Protocol at a level below 550 ppm carbon dioxide equivalent. Sweden will take international action to focus global efforts toward achieving this goal. The total annual emissions per capita in Sweden should thus be less than 4.5 tonnes of carbon dioxide equivalent by 2050 and continue to drop thereafter.

In compliance with the rules outlined in the Convention and the Kyoto Protocol, Sweden is making financial contributions, helping to build the capacity of non-Annex 1 countries by transferring technological know-how to those nations. Additionally, Sweden would want to see action taken so that reductions in global emissions of greenhouse gases may be accomplished at the lowest feasible cost. As a result, the work to build the flexible mechanisms of the Kyoto Protocol is included within the scope of the climate plan. Sweden is aiming to guarantee that climate policies contribute to sustainable development in developing countries while also participating in international cooperation within the framework of the Clean

Development Mechanism (CDM). The quantity of greenhouse gases emitted by Sweden in 2003 was 70.6 million tonnes of carbon dioxide equivalent, which is roughly 2% less than the level in 1990.

Between 1990 and 2003, Sweden's total population rose from 8.59 million to 8.98 million, reflecting a steady rise. This indicates that emissions declined from 8.4 tonnes of carbon dioxide equivalent per person and year throughout the period to 7.9 tonnes of carbon dioxide equivalent per person. In compared to other industrial nations, Sweden has relatively low levels of emissions produced per inhabitant (Ministry of Sustainable Development, 2005).

Sweden in Paris Agreement

The United Nations has been provided with Sweden's long-term climate policy. This plan is part of the work that Sweden is doing under the Paris Agreement, and it incorporates ambitious emission targets and policies that will accelerate climate transition in Sweden in line with the aims of the Paris Agreement. However, the ultimate goal of the Paris Agreement is to maintain a temperature increase for the planet that is far below 2 degrees Celsius, and in ideal circumstances, below 1.5 degrees Celsius. The Intergovernmental Panel on Climate Change (IPCC) suggests that significant, far-reaching, and unprecedented changes are necessary in all facets of society. It is strongly recommended that all countries provide their long-term climate strategy by the year 2020 in order to accomplish these changes.

Isabella Lövin, the minister of environment & climate (Sweden), mentioned, ‘Sweden was one of the first countries in the world to adopt a net-zero emissions target, and the strategy reflects this very ambitious target. In this way we’re also demonstrating international leadership and showing other countries that transition is possible’.

The climate policy framework serves as the basis for the plan, which has the objective of reaching net-zero emissions by the year 2045 and then negative net emissions beyond that. In order to guarantee that Sweden will reach this objective, many intermediate objectives have been outlined. The plan provides a synopsis of the national actions adopted in a variety of fields, such as industry, transportation, agriculture, energy, and among others (Sweden submits long-term climate strategy to

UN, 2020).

Swedish Climate Policy Framework

There is an increasing amount of pressure being put on countries to successfully reduce their production of greenhouse gases. This is the result of both multilateral accords, such as the Paris Agreement that was reached at COP21 in 2015, and interest groups within civil society both on national and global level. As a result, a great number of policy measures have been suggested, developed, and put into effect in an effort on the part of political actors to steer the progression of social development in a path that is friendlier to the environment.

The Riksdag, or Lower House of Parliament, of Sweden, decided in June 2017 that the nationrequired both a framework for climate policy and a climate act. The Paris Agreement will be implemented in Sweden according to this framework, which is the largest climate reform Sweden has ever undertaken. By the year 2045, Sweden is expected to have achieved its objective of having no net emissions of greenhouse gases into the environment (The SwedishClimate Policy Framework, n.d).

A Climate Act (the government must base its climate policies on the climate objectives and provide a climate report in each year's Budget Bill.), climate goals (long-term goal of zero net emissions by 2045; interim targets for 2020, 2030, and 2040), and a Climate Policy Council (which review government policies to make sure they support the government's objective of having no greenhouse gas emissions by 2045) comprise the framework. The framework's purpose is to "create a clear and consistent climate policy to convey long-term signals to the market and other stakeholders," as well as to include climate goals into all governmental sectors (Matti, Simon, Petersson, & Christer, 2021).

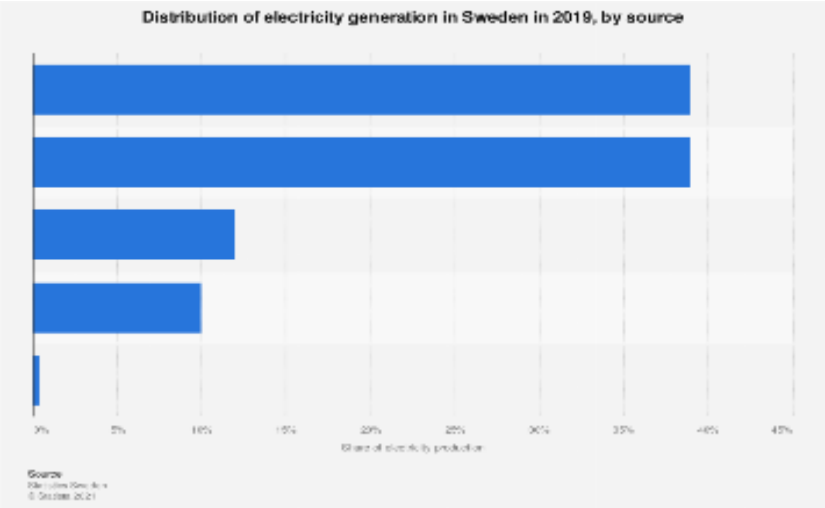
The framework's goal is to bring clarity and stability to climate policy. It will offer long-termconditions for industry and society to execute the necessary transformation to meet the climate change challenge. For the first time, Sweden will also have a law requiring implementing a climate strategy based on the Riksdag's climate goals. The government must produce detailed updates on how progress toward the goals is being made, and an impartial climate policy council will assess how effectively the overall policy is meeting the climate goals. In short, this policy is a critical component of Sweden's attempts to meet the Paris Agreement environment (The

Swedish Climate Policy Framework, n.d).

Energy Mix of Sweden

Sweden uses bio fuels, water, wind, and other local renewable energy sources. Additionally, it imports bio fuels, fossil fuels including oil and natural gas, and nuclear and bio fuels. The primary sources of electricity generation in Sweden are nuclear and hydropower. Since the 1980s, this has been the situation. However, during the past 10 years, wind power has grown dramatically (Energy in Sweden 2021, 2021)

In 2019, Sweden's primary sources of energy generation were hydro and nuclear power, which together accounted for 39 percent of the nation's supply. With renewable energy sources including hydropower, nuclear, wind, and solar accounting for more than 90% of the nation's electricity mix. Sweden is one of the world leaders in decarbonisation. Although it only makes up a small portion of the overall electrical grid at the moment, and also Sweden's solar electricity output rose and surpassed 500 gigawatt hours in 2019. The supply of wind energy in Sweden also increased significantly at that period. The nation's capacity for renewable energy has increased steadily over the last 10 years, hitting 32 gigawatts in 2020. With more than 13 megawatt hours utilized per person yearly, Sweden was one of the top leading users in Europe. Moreover, Sweden's electricity usage has tended to rise over the previous ten years, reaching a peak of approximately 175 terawatt hours in 2019 (Distributionof electricity generation in Sweden in 2019, 2021).



1. Hydropower 39%
2. Nuclear 39%
3. Wind 12%
4. Thermal 10%
5. Solar 0.4%

Sweden & Sustainable development

The idea of sustainable development is well received in Sweden, and the country is now working on formulating plans that will combine environmental policy with other types of policy. The stated position of Sweden is that economic expansion must take place without causing any more harm to or depletion of the national environment.

Sweden is one of the nations that created sustainability principles as early as the late nineteenth century. Sweden's structural adjustment from an agrarian to an industrialized society and from an industrialized to an information society, as well as the development of democracy and the establishment of a welfare state, are significant historical examples from which future sustainable development efforts can learn. In the second part of the 20th century, the pursuit of social and economic progress gave way to the pursuit of ecologically sustainable development. In Sweden, it is conventional to evaluate present demands and interests against the prospects of future generations. Together with Sweden's historical experience, this method created a firm foundation for the job of integrating social, cultural, economic, and ecological factors.

The overall strategy of Swedish government is to promote sustainable development. This is the first time the Swedish government has produced a plan for sustainable development that integrates the country's social, cultural, economic, and environmental concerns. It is founded on previously accepted goals, metrics, and tactics that are represented in the policy being pursued. In addition to outlining a future vision, Sweden's national plan for sustainable development also identifies many key core areas that are crucial to efforts toward sustainable development. The

strategy's vision, justification, and final objective ought to be everlasting.

The country's sustainable development plan has two objectives. In order to prepare for the World Summit in Johannesburg, South Africa, in the fall of 2002, all UN Member States pledged to have developed national sustainable development policies. The second is to provide an overview of Sweden's present state of sustainable development as well as a look tothe future (Sweden's National Strategy for Sustainable Development 2002, 2002).

A government bill with a follow orders for the implementation of the 2030 Agenda was approved by the Riksdag (Parliament) of Sweden in December of 2020. The bill stated that Sweden would implement the 2030 Agenda in order to achieve economically, socially, and environmentally sustainable development through a policy that was consistent both nationally and internationally. The premise of the Agenda to "leave no one behind" will serve as a compass for the implementation. This is a commitment to realizing human rights, gender equality, addressing inequalities within and between countries, universal social protection, strengthening empowerment and participation, and the transition towards resource-efficient, resilient, and climate-neutral economies. These are all goals that we have set for ourselves. In addition to this, Sweden regards the promotion of multidimensional poverty reduction, social discourse, and decent employment as key parts, as well as the improvement of statistics to monitor progress on compliance with the concept (Sweden: Sustainable Development Goals, 2021).

Environmental Activism in Sweden

The effects of climate change are starting to become more obvious at the same time as more warming is becoming inevitable as a consequence of insufficient climate mitigation. Although, cities in the Global North are also experiencing impacts such as hurricanes, flooding, droughts, and heat waves, which is prompting calls for adaptation and disaster-risk reduction. However, cities in the Global South have already had to deal with greater impacts. As a direct result of this, cities all around the world are gradually but steadily moving adaptation higher up on their political agendas. Critics, on the other hand, have suggested that urban adaptation efforts are primarily focused on maintaining economic growth while ignoring the fundamental reasons of asymmetrical liability to the consequences of climate change, which gives

rise to climate injustices. The study investigates the factors that either facilitate or impede the participation of three political groups in the process of urban climate adaptation: disadvantaged communities, climate movements, and social justice activists.

First, residents of disadvantaged and vulnerable groups are most likely to be directly affected by climate injustices connected to adaptation. According to the grievance theory of social movements, mobilization on the subject may be anticipated. Second, climate movements contribute essential contributions to discussions on principles and criteria for justice and fairness in climate change solutions and fight for reforms based on inclusive and rights-based negotiating procedures and participation. Also, informed by climate justice concerns, activists have called attention to the historical and present injustices that underpin climate change, while also pushing for mitigation and adaptation options that do not enhance but rather reduce vulnerabilities. Third, activists for social justice have the ability to handle problems with social justice at the local level through political campaigns, the provision of services, and the capacity of their organizations. On the other hand, they are frequently portrayed as playing crucial roles in linking urban struggles by facilitating the formation of coalitions between more resourceful and less resourceful groups. As a result, they tackle the more general issue of inequalities associated to local adaptation.

It is a sort of indication that social movements are leading the politics of adaptation that appears to be forming in Swedish society, and as a result, individuals in Sweden have a greater feeling of responsibility regarding climate change (De Rosa, De Moor, & Dabaieh, 2022).

Role of NGOs in Environmental Activism

Through the collaborative efforts of many groups—including the government, non-governmental organizations (NGOs), and private citizens—a solid knowledge foundation about biodiversity is regularly updated. Non-governmental organizations (NGOs) play an important part in the management and finance of species recovery strategies, as well as the spreading of knowledge on nature conservation (Sweden-OECD).

Environmental non-governmental organizations, also known as ENGOs, have been working to preserve and safeguard the natural environment for more than a century, and their ranks have grown in line with the growing number of people who are concerned about the environment. The loss of biodiversity, the degradation of land, the pollution of water and air, and other environmental problems are, however, something that all of these groups are concerned about in a similar manner. Some companies work toward the goal of sustainable development in conjunction with non-governmental organizations (NGOs). The environmental non-governmental organizations (ENGOs) were the first players to point out those human activities were the cause of the rising environmental changes and threats. However, they play an important role in the governance of the environment. According to the findings of a number of academics, nongovernmental organizations (NGOs) in general act as a catalyst for change.

In Sweden, there is several environmental protection NGOs. Nonetheless, the Swedish Society for Nature Conservation, Friends of the Earth, and Keep Sweden Tidy are mentioned in this article. All of them are non-profit organizations that operate in diverse ways to safeguard the non-human world. In general, its members share their concern for the deterioration of land, air, water, species variety, and the interface between the natural environment and the human world. Environmental non-governmental organizations can vary in terms of policy engagement, geographic focus, and ideological orientation.

Swedish Society for Nature Conservation

A group of concerned people created the Swedish Society for Nature Conservation (SSNC) on May 16th, 1909. With more than 224 000 members in 2016, the group, which is independent of any political or religious connection, is now the largest and oldest environmental organization in Sweden. The organization has a total of 270 community branches throughout the Sweden. The groups are autonomous in their operations; therefore their work may vary from group to group. Local groups frequently address and attempt to influence local environmental concerns and conversations relating to their location. This includes arranging classes, discussions, trips, and more events for the local people. Each local group has its own board of directors and organizes its own operations and work emphasis. It involves sharing

information, identifying environmental concerns, influencing and developing responses to have an effect on national and international authorities and politicians.

The Swedish Society for Nature Conservation seeks to exert pressure on politicians, educate public, and influence environmental laws. Through its planned discussions, conferences, and seminars, as well as its own publications of journals, press materials, and books, it has been the most influential environmental group for decades. The organization has five national and international priority work areas. Among these include climate change, forests, environmental pollutants, agriculture, oceans, and fisheries (Olsson, 2016).

Friends of Earth

Friends of the Earth International (FoEI), is a non-profit environmental organization that was established in 1971 by four different groups from the United States of America, France, England, and Sweden. It has grown to become the most extensive network for environmental activism at the grass-roots level. A friend of the Earth Sweden has expanded to include more than 2,600 members and 15 different local groups around the country. It currently has 2 million members and supporters all over the world and is working to solve the most pressing problems facing society and the environment. It poses a challenge to the dominant paradigm of economic and corporate globalization and promotes alternatives that will assist in the formation of societies that are ecologically sustainable.

Friends of the Earth Sweden's goal are to combat climate change, protect the environment, and foster worldwide cooperation. Public awareness campaigns, mobilizing action, and influencing decision-makers on a broad variety of issues at all levels — from household decisions to national and international policy — are the strategies they deploy. The organization includes local groups in several areas around Sweden, allowing members to engage in local environmental issues and participate in campaigns and organizing efforts (Sweden, 2022).

Keep Sweden Tidy

The Keep Sweden Tidy foundation is a non-profit environmental organization whose roots date back to 1963, when the Swedish Society for Nature Conservation launched the Keep Nature Tidy campaign. Swedish Environmental Protection

Agency created it. Through public campaigns, prizes, and environmental education, the group seeks to encourage recycling and reuse, as well as to avoid littering in the community. The organization strives to promote sustainable development by influencing the behavior and attitudes of individuals (The Keep Sweden Tidy Foundation, 2022).

Land, Sea, Opinion, Preschool, and School are the four focal areas that the organization uses to both direct its activities and define the organization. There are campaigns in these areas and partnerships with various players in the related industries. In September 2015, they cleaned up the western coastline region. The group is always trying to learn more about the yarn net and other fishing equipment.

In order to achieve its goal of cleaning up the country it has implemented projects in which members of the public voluntarily pick up rubbish, as well as recommendations for communes and eco-labels for events. People are free to decide for themselves whether or not they wish to participate in the event. They are eventually in a position to get resources and instruments from their communes that were first provided by the organization. At the start of 2016, 584692 persons have signed up to participate in the project. In a same manner, it is working with the communes to support, advice, and promote various activities in an effort to make them more sustainable. The organization offers the event planners guidance as well as achecklist that is comprised of 47 bullet points to assist them in their preparations. Several of them include planning and communication, trash and littering, transportation, food and beverage, and energy and the climate (Olsson, 2016).

The Role of Greta Thunberg in Environmental Activism

Greta Thunberg, whose full name is Greta Tintin Eleonora Ernman Thunberg, was born in Stockholm, Sweden on January 3, 2003. Greta Thunberg, whose full name is Greta Tintin Eleonora Ernman Thunberg, was born in Stockholm, Sweden on January 3, 2003. Thunberg was only 15 when she started her climate activism. Thunberg was born and nurtured among a family of artists. Malena Ernman, her mother, is an opera singer, and Svante Thunberg, her father, is an actor. Beata, her younger sister, is a well-known Swedish singer. She is a Swedish environmental activist who founded the Fridays for Future campaign in 2018 to combat the issue of climate change (also called School Strike for Climate) Thunberg began skipping

school on Fridays and demonstrating in front of the Swedish Parliament with the simple phrase "School strike for climate" scribbled on poster board. Her activities have motivated millions of young people throughout the world to organize and protest, thanks to social media.

Numerous invitations to talk on climate change were sent to Thunberg. She spoke at the World Economic Forum in Davos, Switzerland, the European Parliament, and the legislatures of Italy, France, the United Kingdom, and the United States. In September 2019, her presence at a UN climate event in New York City, for which she sailed aboard an emissions-free boat, received significant notice due to her emotional remarks: "You have stolen my dreams and my childhood with your empty words…We are in the beginning of a mass extinction, and all you can talk about is money, and fairy tales of eternal economic growth. How dare you". That month, millions of protestors marched in over 163 countries as part of climate strikes. While Thunberg was credited with influencing the perspectives and behaviors of certain individuals on climate change, her impact was dubbed the "Greta effect." (Greta Thunberg, 2019).

Greta Thunberg has been selected as the Person of the Year by Time magazine for 2019. TheSwedish climate activist is the first person to be named Person of the Year who was born in the 21st century. However, she also holds the record for being the youngest person to ever earn the award. Thunberg doesn't have a silver bullet for the complicated and entrenched politics of climate change. But she has been successful in bringing about a change in global attitudes, turning millions of ambiguous, late-night concerns into a global movement demanding immediate change. She has shamed those who are unwilling to act and issued a moral wake - up call to them. She has encouraged leaders to make pledges, ranging from mayors to Presidents. Moreover, Thunberg emerged as the most compelling figure to speak out about the most pressing problem confronting the world today (Charlotte, Haynes, & Worlan, 2019).

Conclusion

Climate change is not limited to single country because it is global problem, challenging the social, economical and political paradigm of every country in the world. In this way, climate and environmental challenges emerged in Swedish

society in the 19th century. However, Sweden started making counter policies regarding climate change in 1960s. The initial policies adopted by Sweden were focused on nature conservation. These policies were quite successful because of that Sweden is considered as a sustainable nation.

The major role player in the making and adaptation of encountering climate change policies are the Sweden's parliament and Environmental protection Agency (EPA). Other than that, the county administrations and municipalities were also responsible for safeguarding environment which means they are also important while analyzing Sweden's overall implementation of climate change policies. From 1967 till today, the country's overall policies are appreciated and raised the profile of the country in sustainable development. In short, Sweden was quite fast in the making process of environmental laws.

Other important players that help in the implementation of environmental regulations are NGOs and public figures. There are many NGOs which are working on the clean and green environment in Sweden. The Swedish Society for Nature Conservation, Friend of Earth and Keep Sweden Tidy are considered very important when it comes to the implementation of environmental laws and policies in Sweden. However, the most important and famous public figure, a 17 years old, Greta Thunberg is also known as voice of awareness about climate change. She pressurizes the governments, not only Sweden but majority of the countries of the world. All these above NGOs and the public figure, Greta Thunberg, raised the level of public activism with respect to climate change.

To conclude, encountering policies for climate change is very important and it should be develop by every state. The Sweden state level policies implementation is appreciable as compared to other countries of the world and the European Union. Likewise, every state should consider and analyze the Swedish environmental policies for tackling this global problem.

CHAPTER No_04

COMPARING SWEDEN'S CLIMATE POLICIES WITH SOUTH ASIA

When Greta Thunberg was on her way to the United Nations climate negotiations in Madrid a few years ago, kids at a local elementary school in Stockholm were required to remove their shoes at the door, including their sneakers and boots. This move was done not only to make them more comfortable, but also to lessen the requirement for the use of chemical floor cleaners, which are bad for the environment (Banic 2020). Sweden has been doing a phenomenal job on the issue of climate change. From education sector to the social domain and from economic division to the political tables, environment has been a top agenda in Sweden. Since 1969, environmental studies, including ecology and conservation, have been an inseparable component of the educational system in Sweden. The bond with nature has always played an important role in Swedish culture.

Although, an intra-region environmental analysis has been presented in the earlier chapters of this research work nevertheless, the Scandinavian inter-region comparison specifically the Sweden is worth mentioning here. Certainly, Sweden has been taking significant steps on environmental front however, there is a lot to cooperate on and learn from the rest of the world. Firstly, the fact that the nations that are most susceptible to the effects of climate change have also been the ones to contribute the least to historical greenhouse gas emissions is a cruel twist of fate brought on by the climate catastrophe. This is genuinely true in case of the African continent (Chevallier and Benkenstein 2022). However, despite the irony, South Asian states have been showcasing its environmental struggle in a possible way out.

Climate Challenges to South Asia

South Asia is one of the regions that are most susceptible to the effects of climate change. The region, which encompasses climatic zones as varied as its physical terrain, is currently undergoing a variety of effects brought on by climate change. These effects include glacial melting, forest fires, increasing sea levels, mountain and coastal soil erosion, and the entry of salty water. The region is currently experiencing heat waves, cyclones, droughts, and floods are becoming more intense, putting the

ability of the government, companies, and individuals to adapt to new conditions to the test. More than half of all people living in South Asia, or 750 million people throughout the region's eight nations (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Sri Lanka and Pakistan), have been impacted by at least one climate-related natural catastrophe during the course of the past two decades. An area that currently contains some of the world's poorest and most vulnerable populations might see their living conditions deteriorate even more as a result of climate change, which could affect as many as 800 million people (Climate and Development in South Asia, 2022).

Around 1.5 billion people depend on the Himalayas (mountain range) for their survival since they live right on the floodplains of its numerous rivers. Himalayan rivers receive around 10% of their volume from glacier melt, which is necessary to maintain river flows during dry seasons. However, when the temperature rises, in comparison to the world average, the Himalayan ice mass is melting more quickly. The effects of climate change are expected to have significant changes in the Himalayan Basin's seasonal rather than yearly water supply. When people need water for irrigation, hydropower, and other uses, the summer months—which account for around 60% of the annual flow—are when it is least likely to be available.

Accompanying the melting of glaciers is the production and expansion of glacier lakes. Recent studies by the International Centre for Integrated Mountain Development (ICIMOD) indicate that there are twenty potentially hazardous glacial lakes in Nepal and twenty-five in Bhutan that pose a risk of severe flooding to outlying populations.

Increasing flooding, surges, storms, precipitation, sea-level rise, and human activities all contribute to the region's deteriorating erosion. Coastal regions, overgrazed rangelands, and deforested mountains are most impacted. In India, 26% of the coastline is prone to erosion, and 450 hectares of land are lost annually. In certain regions, the coastline of Sri Lanka is vulnerable to substantial erosion, while the hill country is subject to regular landslides. In Bhutan, India, and Nepal, landslides are occurring with alarming frequency in mountain villages. The loss of land is detrimental to economies, agriculture, and ecosystems, as well as the livelihood chances of rural poor, in particular. Coastal and mountain soil erosion in South Asia will intensify in the next decades due to the increased likelihood of extreme weather events caused by climate change.

The lengthy and densely populated coasts of the South Asian region are gravely endangered by sea-level rise. It is expected that the sea level would increase 45 cm in Bangladesh by 2050, impacting 10–15 percent of the land area and an estimated 35 million people. Also, the sea level is expected to increase by 15–38 cm in India by 2050, putting at danger important cities like Kochi, Kolkata, and Mumbai that drive regional growth. A significant stretch of the Sri Lankan coastline is less than 1 meter above sea level and might be flooded by rising sea levels, along with vital transportation facilities. As the average height of its islands is 1.5 meters above sea level and its highest point is less than 2 meters above sea level, the very survival of the Maldives is in danger. The extreme hazards presented by sea-level rise might result in massive migration, with repercussions across international borders. Sea-level rise leads to salty water intrusion, endangering drinking water supplies, agriculture, and aquaculture (Climate Change in South Asia).

Flooding may be a recurring problem in large parts South Asia. This summer, South Asia has been hit particularly hard by a number of weather-related disasters, including severe floods in Bangladesh and heat waves in India and Pakistan, which have all had an impact on the area in the span of just one month. According to the findings of recent studies, the regions of the Global South, namely South Asia, would be the ones to bear the brunt of the adverse effects of climate change. According to studies conducted by Action Aid International and Climate Action Network South Asia, the effects of climate change are expected to result in the displacement of 62 million people living in South Asia by the year 2050 (Wazir, 2022).

South Asian Climate Policies

Environmental concerns are receiving a growing amount of attention from decision-makers in governmental positions across South Asia as well as from the general population. The standard of living of people is negatively impacted, and the ecosystem is subjected to irreparable harm, as a result of visible environmental concerns such as deteriorating air quality and global climate change (Karki & Sellamuttu, 2018). In terms of the effects on the surrounding environment, the decades of fast economic expansion that these countries have experienced have produced mixed results.

The United Nations Environment Program (UNEP) took the initiative to establish the South Asia Co-operative Environment Program (SACEP) with the purpose of

protecting and preserving the environment in South Asia. Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka are the eight countries that make up SACEP, an organization that is an association of member nations. At the Ministerial Meeting that was held in Colombo in February 1982, the Colombo Declaration and the Articles of Association were both approved, which led to the establishment of the organization. SACEP satisfies the need for the sharing of information, knowledge, and efforts for the purpose of addressing widespread environmental issues.

The most detrimental effects of climate change transcend borders. In response, South Asian developing member nations have reiterated their dedication to collaborating in order to tackle shared problems. The SAARC Declaration on Climate Change adopted by the Council of Ministers of the South Asian Association for Regional Cooperation (SAARC) in 2007, urged SAARC leaders to analyze and address the risks and implications of climate change collaboratively. A three-year action plan that calls on the international community to foster collaboration and give more funding to combat climate change was included in the SAARC Environment Ministers Dhaka Declaration on Climate Change in 2008. The Thimphu Declaration on Climate Change, which was adopted at the end of the 2010 SAARC Summit in their 25th Jubilee Year, sets an ambitious goal for South Asia to lead the world in advancing renewable energy, reducing carbon emissions, and reducing poverty while bolstering resilience to climate change.

Additionally, supportive steps are being taken by other regional organizations. The Asian Disaster Preparedness Centre offers assistance in developing capabilities and skills, putting policies into place, distributing knowledge, and increasing awareness in order to better prepare for catastrophes.

Asian Development Bank (ADP) is incorporating public education and awareness campaigns into capacity development projects and programs in sensitive sectors in coordination with South Asian country and regional efforts. All of the region's developing member nations have developed climate change implementation plans, and ADB also supports informal knowledge networks and provide technical support for regional training activities. ADB is helping agricultural research facilities forecast the effects of climate change and choose the best course of action. The least expensive mitigation and adaptation measures that may be followed will be determined with the aid of an examination of the Economics of Climate Change in South Asia. Extreme events, climatic variability, and crisis scenarios will all be

covered in a research on the effects of glacier melt on water and energy resources that are being done in collaboration with the International Centre for Integrated Mountain Development. Opportunities under the Clean Development Mechanism for rail projects are being researched and examined in Bangladesh, India, and Sri Lanka (Climate Change in South Asia).

At the same time, South Asia possesses an unfinished development agenda with genuine pretensions to achieve middle income status in the coming years. This will involve increasing access to energy, increasing incomes in rural areas, and managing large-scale urbanization, amongst other things. If South Asian countries are able to successfully maneuver these development transitions while also reducing emissions and increasing climate resilience, then the region will be able to lift millions of people out of the threat of poverty and vulnerability, which will help the world to secure the overall transition to a more stable climate.

The South Asia Climate Roadmap is an another unambiguous move toward better integrating and ramping up World Bank Group assistance for mitigation and adaptation initiatives over the next five years with development activities. The plan expands upon the global climate change action plan by providing specific actions that may be taken to assist. T he region expedite transitions in three important areas that will be crucial to improving incomes, lowering emissions, and creating resilience to the rapidly rising environment in the region. These three major sectors are:

First, the Bank Group will assist in scaling up climate-smart food system strategies and investments, and second, the Bank Group will support the development of intensify its support for increasing farm output while simultaneously reducing emissions and preserving water, energy, and other resources.

Second, reducing greenhouse gas emissions in the energy industry while simultaneously expanding access to electric power is essential to prevent the most severe effects that climate change can have. The Roadmap is intended to assist nations all throughout South Asia in making the transition to carbon-free energy systems that are not only conducive to economic expansion but also promote social justice.

Third, the Roadmap encourages the development of climate-resilient metropolitan centers that emit fewer greenhouse gases. Within the next thirty years, South Asia will add close to 600 million people to its metropolitan regions. The Bank Group will provide support for the development of competitive and livable cities in South

Asia. These cities will be designed and built with people in mind rather than automobiles, will make intelligent use of urban density and form, and will rely heavily on high-quality, environmentally conscious public transportation (Climate Change Action Plan 2021-2025, South Asia Roadmap, 2021).

Besides all these steps, still criticism exists on the role above mentioned International Organizations and Associations in South Asia while developing climate change policies and their funding. In a blog post, issued by Third Pole raised questions marks on the role of SAARC and mentioned that the potential of the pre-existing efforts to create regional cooperation has not been fully realized by the participating nations as of yet. Frameworks such as the South Asian Association for Regional Cooperation (SAARC), which is failing to deliver on its promises, and cross-border disputes are slowing down development in environmental policy and scientific research respectively.

Comparing Sweden Climate Policies with South Asian Countries.com

The South Asian Association for Regional Cooperation (SAARC) is an organization that consists of all of the South Asian states with the exception of Myanmar. Recently, SAARC has taken steps to broaden its focus, shifting its attention from economic and trade issues to issues that seek to include the protection and management of fragile ecosystems. However, much as with other areas of policy, the usefulness of SAARC as a regional organization continues to be hindered by regional tensions and antipathies, particularly those that exist between India and Pakistan (EFSAS, 2021). A more definite and distinct collective effort by all of the states in the area would be necessary if there is to be any hope of addressing the far-reaching effects that climate change would have on regional affairs.

Likewise, all of the states in the region are members of the South Asia Co-operative Environment Program (SACEP), which is an international organization that places a main emphasis on environmental protection. In order to address a wide range of environmental protection issues, SACEP has adopted a number of policies, some of which include the conservation of ecosystems, the evaluation and control of pollution, and the preservation of national resources. However, despite the fact that SACEP covers a wide variety of problem areas, the organization does not have any cementatious and well-substantiated policy agenda, makes only hazy references to the fact that member states are putting policies into action, and depends on outside donors

to fund its projects (Howes & Wyrwoll, 2012). As a consequence of this, both SAARC and SACEP have only been able to chalk up a few minuscule victories in their fight to formulate a regional strategy for combating climate change.

To sum up, the environmental protection agenda of the Asian region seems tremendously in contrast with the Swedish policy. Firstly, the region lacks political stability thus states tend to involve in armament and regional enmity focusing minimum on environment. Secondly, unlike Europe, there is strong variation in economic, social, and political trends of the Asian states. It includes a number of fast-growing economies along with those states which are economically unstable. Such presence of uneven trends makes it difficult to perform on a multilateral agenda and collective response generation (Howes & Wyrwoll, 2012). Lastly, the European states specifically the Scandinavians have not stopped their environmental boost rather they have shifted from traditional progress to green economies. In comparison, the Asian states lack this ability of transformation for the fact that it does not have the awareness along with lack of support from the population.

Conclusion

Every region in the world is suffering from the problem of climate change. In the same way, South Asia is facing high environmental problems which need proper attention from all the countries in South Asia. The region also needs to develop environmental policies based on cooperation for challenging environmental problems as a whole. So far many steps and policies have been formulated by South Asian Association for Regional Cooperation (SAARC) as well as Asian development Bank, but still problems exists. It needs modification or renewal, so the achievements of better and positive results when it comes to climate change. Other than that, South Asian Roadmap initiative is also a great step towards the green economy but is still not convincing in terms of results.

However, there are many problems that South Asian region is facing in climate policies with respect to the comparison of Swedish climate. It will definitely take more than a decade while reaching to the level where Sweden stands now in environmental protection and policies.

FINAL CONCLUSION & RECOMMENDATION

The effects of climate change are creating new challenges for the world. It is one of the most difficult political issues in practically all parts of the world in all areas. The effects of climate change are already having a negative impact and will continue to do so in the future. However, the first part of the thesis, we examine, from a historical vantage point, the factors that contributed to the onset of climate change. As soon as it was understood that the climate was changing and that this would have negative effects on the lives of people, efforts to find ways to mitigate the threat were initiated by states, policy makers and International organizations. Because of this obstacle, numerous weighty concerns have been brought up for consideration, and the search for potential solutions and alternatives to reduce the impact of the problem has begun. This chapter also provides an overview of the previous and most recent initiatives for addressing climate change in the form of UN Conferences. These efforts include the Paris Agreement, the Kyoto Protocol, the Glasgow Climate Pact, the Montreal and many more. All these agreements highlight the importance and seriousness of this topic. It's just not limited to a single country but to the whole world. Serious steps are necessary by all the states of the world for encountering, and saving environment.

The 2nd part of the thesis dealt with Nordic joint actions and their policies for preserving the ecosystem. As the climate change is not a problem of a single country but the whole world. In the same way, the Nordic region also faces severe climate crisis but their state level policies remain quite successful in this regard. Other than that, the regional cooperation among these states is very influential because of their ranking and leading in better environmental policies and curbing the climate change on national level as well as on International level. Moreover, the Nordic region is also complying with the guidelines set by International agreements for the climate change and saving nature and environment.

Chapter 3rd is an important chapter with respect to the Sweden environmental policies. It explain the Sweden policies since 1960s and also put light on the main factors that are rising the profile of Sweden as the most sustainable nation. The state level policies in Sweden are highly appreciated. Also the role of NGOs and public activists like Greta Thunberg are very important to be taken into consideration while

analyzing Sweden's profile versus climate change. However, the Sweden's policies are compared with Asia and Africa for the better understanding and finding the gaps between state and region level approach and cooperation in this regard.

The last part of the thesis highlights the environmental problems in South Asia. Similar to this, South Asia has serious environmental issues that require due attention from all of the region's nations. In order to tackle environmental issues on a regional level, the area also has to create environmental policies based on collaboration. Although the Asian Development Bank and the South Asian Association for Regional Cooperation (SAARC) have developed numerous actions and policies to date, issues still persist. In order to obtain better and beneficial results when it comes to climate change, it needs to be modified or renewed. In addition, the South Asian Roadmap program is a wonderful step in the direction of a green economy, but the outcomes are still inconclusive.

To conclude this research on one hand highlights the historical evolution of Climate change, and the role of Nordic region especially Sweden. While on the other hand, it takes and presents Nordic region and Sweden as a role model in the field of Climate change by building counter strategies. After studying their policies, it is recommended for the developing countries especially South Asia to improve state level approach (policies), intra-region cooperation for environmental preservation and the emergence of pressure groups i.e. NGOs, and public activists. All these in one way or another way, will help these countries in fighting against climate change and they will lead to sustainable development.

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