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The Politics of Climate Change: A Critical Appraisal of National Climate Change Policy of Pakistan Vis-À-Vis the UN Intergovernmental Panel on Climate Change

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ABSTRACT

Pakistan has been impacted negatively with climate change-a greatest threat to humanity in 21st century. The country had its worst floods in recent history with more than 1500 people killed, an estimated 33 million people directly affected coupled with almost 10 billion dollars damage caused, and about one third of the country inundated. In order to effectively deal with this ubiquitous threat, Pakistan formulated its comprehensive National Climate Change Policy (NCCP) in 2012 and updated it in the light of COP21 measures in the year 2021. Despite these measures that Pakistan undertook in the wake of this impending doom, its climate change policy invites further evaluation so as to identify un-addressed policy measures with respect to the UN Intergovernmental Panel on Climate Change (IPCC). Against this backdrop, the study undertakes a holistic analysis of Pakistan's climate change policy documents being evaluated against the strict criterion set by IPCC. The main features of this criterion include accessibility, background, objectives, resources, monitoring and evaluation, public opportunities, and obligations. Furthermore, the study presents a perspective about the critical aspect of climate change from the viewpoint of Pakistan. In this regard, various surveys and interviews conducted by and from climate experts show that Pakistan is still lagging behind when it comes to implementation of its National Climate Change Policy (NCCP) vis-à-vis the UN Intergovernmental Panel on Climate Change (IPCC). Besides, the findings highlight the need of a future climate change policy to be formulated to contain repetition of climate catastrophe like the 2022 floods that wrecked havoc across the country.

Keywords: *Climate Change Policy, Pakistan, UN Intergovernmental Panel on Climate Change (IPCC), Environmental Governance, Policy Analysis*

1.1 INTRODUCTION

It is evident from substantial scientific evidence that the changes in the natural environment around the world are contributing to the phenomenon of climate change. The changes are taking place across the world, owing to natural as well as man-made activities such as the release of greenhouses emission on unprecedented level. Consequently, the negative ramifications can be seen in the form of rising temperature, melting of glaciers, rising sea-level, and changing climate patterns among others. This climate change is one of the greatest threats that humanity is faced with in the twenty-first century. Pakistan is no exception to the adverse effects of climate change. According to recent statistics, Pakistan is one of the most sensitive countries prone to climate change in the world (Chaudhry, 2017).

Realizing the sensitivities and vulnerabilities, Pakistan formulated its National Climate Change Policy (NCCP) in the year 2012 to deal with climate change (Aslam, 2021). The proposed policy incorporates almost 120 policy-measures as necessary precaution in the areas of mitigation and adaptation. Furthermore, the NCCP covers a wide range of development sectors such as energy, health, transport, agriculture, and forestry.

The sad state of affairs is largely due to the lack of implementation of the policy measures which are inconsistent with UN's sustainable goals 2030. The Intergovernmental Panel on Climate Change (IPCC) in its sixth report highlights the need for responsible consumption and production of resources with climate action necessary to be attained by 2030. Failing to do so would result in undoing all the development gains in terms of political, financial and technological losses to the economy.

1.2 RESEARCH QUESTIONS

How structural loopholes of National Climate Change Policy (NCCP) are not in conformity with Intergovernmental Panel on Climate Change (IPCC)?

Why is there a policy gap in achieving the objectives of NCCP?

How the environmental protection policy of Pakistan can be enhanced to get the desired outcome of mitigating the threat posed by climate change?

1.3 LITERATURE REVIEW AND ITS LIMITATIONS

A literature review significantly increases one's knowledge on a given subject. In other words, a literature review is where a researcher not only reveals her/his thoughts and ideas but sets a stage for answering questions that had already been answered by someone else. In short, the idea of literature review is that a researcher doesn't reinvent the wheel but simply researching it so that later on the researcher can look at it from a different angle to question it, to debate on it, and to add information to it. Having said this, the study has reviewed a large amount of literature on the subject of climate change and its impacts on countries like Pakistan.

Ilhan Niaz in his recently published book, *'Downfall: Lessons for our Final Century'* has extensively explored the threat of ecological changes that are unfolding at an unprecedented level. Besides, there is a near-scientific consensus that human activity, in fact, is the primary cause of ecological breakdown that is now transpiring. Ironically, the causes are understood and the solution to those causes also known but there is a lack of will to do anything about it (Niaz, 2022).

Adil Najam, a former vice-chancellor of the LUMS, currently the Dean of Pardee School of Global Studies at Boston University and an acclaimed expert on climate change in his research paper entitled, *'Developing Countries and Global Environmental Governance: From Contestation to Participation to Engagement'* has indicated that there is no doubt that we are in midst of climate breakdown which brings us into the age of climate adaptation. (Najam, 2015).

Jumaina Siddique in her article entitled *'Pakistan's Climate Challenges Pose a National Security Emergency'* written for the U.S. Institute of Peace has clearly indicated the challenges ahead for Pakistan. According to her, last year's April month was the hottest month in the past 60 years which resulted in terrible heat wave that claimed the lives of more than 77 people (Siddique, 2022).

1.4 PROBLEM STATEMENT

Climate change has devastating consequences worldwide. The developed world particularly the G20 countries emit almost 80% of carbon into the atmosphere while the rest of 20% is contributed by the underdeveloped and developing world. Pakistan on its part contributes almost 0.8% of the total emission (UN Environment Programme, 2021), yet in recent years and months, it has been at the receiving end of much of devastation caused by climate change. While it is established that Pakistan formulated its National Climate Change Policy (NCCP) in 2012 to mitigate and adapt to the looming threat, the policy invites introspection into the structural aspect so as to find shortcomings and suggest possible steps. Moreover, the

study is particularly concerned with drawing a comparative analysis of the National Climate Change Policy (NCCP) with regard to the UN Intergovernmental Panel on Climate Change (IPCC) to address the raised questions.

1.5 RESEARCH METHODOLOGY

The content of relevant documents like NCCP and IPCC are analyzed to reach the valid findings using and relying on secondary and primary data. The secondary data heavily relies on books, research journals and different internet sources while the primary data is obtained by the results gained using interviews and survey through questionnaires.

1.6 HYPOTHESIS

As a developing country, Pakistan has many economic constraints on its part to deal with the threat of climate change. Having said this, the environmental policy of Pakistan is flawed with respect to international protocols in terms of policy measures to mitigate climate disasters.

1.7 CONCEPTUAL FRAMEWORK

The conceptual framework is proposed by Multidisciplinary Digital Publishing Institute (MDPI) which is a publisher for scientific journals. It was founded in 1996 and is based in Switzerland. The conceptual framework takes the case study of Singapore. It is specifically designed to measure climate initiatives, its implementation and outcomes with respect to the Paris Climate Agreement. The conceptual framework is a holistic approach in this regard as it covers both micro and macro level analysis. Starting from the individual to state/society level and then goes up to system level then leaves the individual level behind and focuses on the state and system level. It covers national rectification plans for reduction in the targeted of emission especially of the greenhouses effect.

CHAPTER TWO

CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

The conceptual framework has been formulated particularly in response to the deteriorating climate change conditions around the world. The framework owes much to the Paris Climate agreement. It is designed to demonstrate pro-environmental behavior within various levels so as to draw a comparative analysis vis-à-vis other countries. It was originally and specifically designed for Singapore which had taken significant initiatives with successful implementation and desired outcomes towards combating the negative effects of climate change (Ai Sian Ng, 2017). The framework has been chosen in this context as per the requirement of the study to help us drawing a figure to better understand the conceptual lens for the phenomenon of climate change in the context of Pakistan (Sattar, 2022)

2.2 EXPLAINING THE CONCEPTUAL FRAMEWORK

In recent years, the threat emanating from climate change has gained traction among people from almost every country. It has seriously endangered the life on planet earth which is the only planet known to have life among the vast cosmos. It was in this context that the world community arose to take necessary actions towards mitigating and adapting to climate change. Many international agreements were made and agreed upon by states from time to time. The Montreal (1987) and Kyoto (1997) protocols were the significant milestones in this regard.

The crux of the idea is that whatever decisions are being taken by the stakeholders involved, it has huge impact on the thinking and behavior of the people. The behaviors are essentially the by-product of two motivators; the first one is called 'Intrinsic' and the second one is called 'Extrinsic' (Linden, 2015). According to researchers' data, information, knowledge, and awareness of climate through different means such as campaigns or news in electronic and print media have drastically shaped and changed people's behavior towards more environment-friendly initiatives (Samson, 2023).

The conceptual framework, thus, explains the whole process as a two-way traffic method whereby the negative aspect of it could be overcome with taking solid steps to avoid the hazardous effects and the positive aspect could be achieved with overcoming the hurdles/barriers to sustainable environment.

2.2.1 THE INFRASTRUCTURAL FACTOR

The infrastructural factor involves the necessary and required reforms on the part of the government specifically for the goal of attaining environment sustainability. The data provided by the pro-governmental model clearly shows in the infrastructural model incentives like providing public transport and cheap technology which are part of the 'Intrinsic' motivator. The public at large are hesitant to 'Go Green' because they lack the support from their governments to transform their dependence from fossil fuel to renewable energy infrastructure (Söderholm, 2012).

2.2.2 POLITICAL FACTOR

The role of government in implementing and enforcing rules with regard to instilling pro-environment behavior in people is termed as the political factor. On the global level, the pro-environment model bringing about rules and principles to significantly reduce greenhouse emission. Laws are being made to reduce the production of gasses hazardous to environment and the living beings. In this way, political decisions and the subsequent legislation bring about awareness in masses which in turn shapes their behavior towards environment-friendly initiatives (Söderholm, 2012).

2.2.3 ECONOMIC FACTOR

The economic factor involves all those incentives that encourage the people to go for environment-friendly projects. In Pakistan, it revolves around subsidies and tax breaks which the government(s) sanctions to assist both producers as well as consumers in this regard. The thinking behind this is not to deter but rather to encourage people let go of the conventional/traditional methods of relying on energy (Li1, 2016).

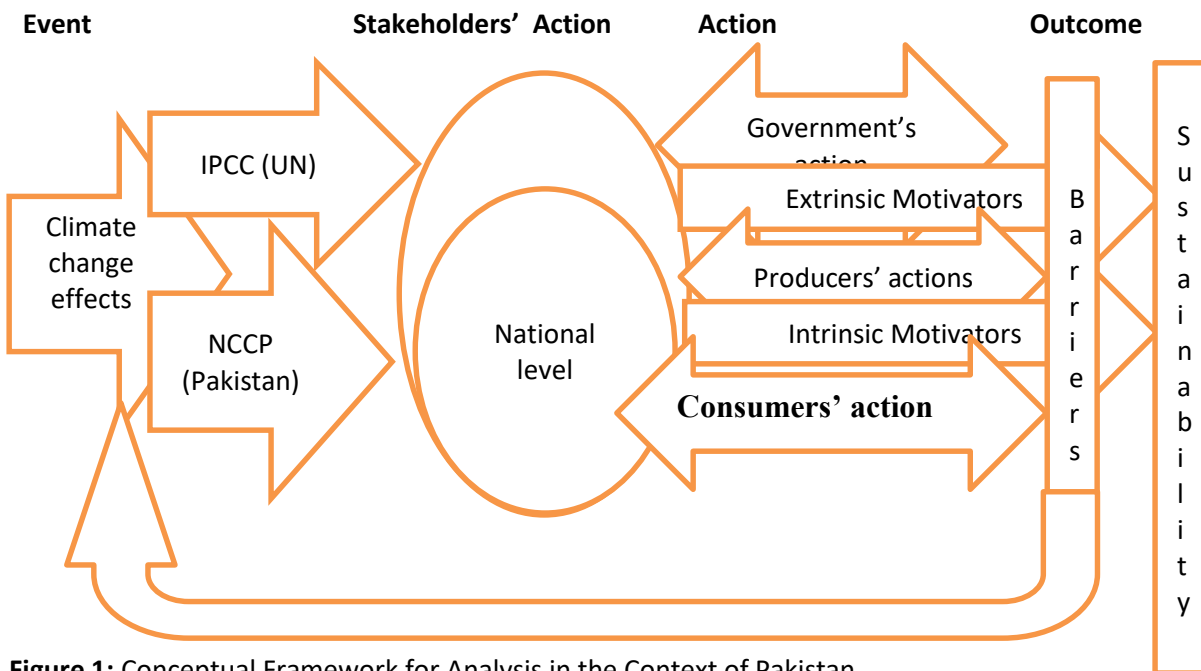


Figure 1: Conceptual Framework for Analysis in the Context of Pakistan

2.4 EVOLUTION OF CLIMATE POLICY IN PAKISTAN

Climate change has global ramifications. It has become one of the greatest challenges in 21st century. According to scientific sources, over the period of last century, a temperature of 0.57 degrees has been recorded which is mean less than 0.75 degrees in the South Asian region (Andrew G. Turner, 2012). Similarly, from the year 1961 to 2007, a significant rise of 0.47 degree centigrade was observed. This culminated into 2004 being the warmest year as the temperature rose up to 1.12 degree centigrade from 0.52 degrees (M. Staubwasser, 2013).

Since its inception, Pakistan faced multiple natural calamities. These calamities include heavy rainfall, precipitation, temperature rise, and heat waves which are the result of global warming. The year 2005 to 2007 has witnessed an irregular pattern of heavy rains due to monsoon climate pattern. The country has had floods from 2001 to 2010 and onwards.

2.4.2 PAKISTAN METEOROLOGICAL DEPARTMENT (PMD) 1947

The Pakistan Meteorological Department was established in 1947. It was working under the Aviation Division – under Cabinet Secretariat. In its early years, Pakistan needed a research institute to carry out extensive data about early warnings related to natural hazards like earthquake, tsunami, tropical cyclones, and floods etc. This department is further divided and tasked with four different assignments. They are: National Centre for Drought based in Islamabad; Floods Forecasting Centre in Lahore, Research Department in Gilgit, National Seismic and Tsunami Warning Centre in Karachi.

2.4.1 FORMATION OF MINISTRY OF ENVIRONMENT 1975

Following the Stockholm Declaration of 1972, the government of Zulfikar Ali Bhutto announced the establishment of Ministry of Environment in 1975 (Ahmad, 2020). Initially, the responsibilities were handed over to the provinces to monitor and implement climate-related policies and reforms, only to be taken after the passing of 18th Amendment in 2010 which resulted in taking back the charge from the provinces and handed over to center under the Ministry of Climate Change. Consequently, an ordinance called 'Pakistan Environment Protection Ordinance' (PEPO) was passed to enable a framework for the establishment of institution for environmental protection in Pakistan (Banuri, 1993).

CHAPTER THREE

STRUCTURAL DISSECTION OF NCCP AND ITS CONCURRENCE WITH IPPC

3.1 INTRODUCTION

There is no denying the fact that climate change has wreaked havoc across the world. Pakistan, of course, is no exception to this. Geologically, Pakistan is located in the tropic zone where strong influence of climate change is taking place. There is a huge economic, social, and environmental imbalance brought about by the climate change. Data shows that 2010 floods in Pakistan impacted almost 20 million people and resulted in huge economic disparities (Sayeeda Amber Sayed, 2014). Consequently, Pakistan formulated its first climate change policy and enforced in 2012 (National Climate Change Policy, 2021).

3.2 STRUCTURAL DISSECTION OF NCCP

3.2.1 WATER RESOURCES

Climate change has a direct effect on Pakistan because of its water resources which mainly comes from melting glaciers in the Himalayas coupled with heavy monsoon seasons that hit the region annually. As a result, the water fills the river basins flowing in Pakistan.

POLICY MEASURES:

- Already existing water storage facilities should be revised properly to gauge its potential resilience against floods
- Re-planning of the irrigation system to meet contemporary challenges especially by less reliance on traditional methods of irrigation

- Strategies for water conservation should be adopted to reduce the loss of water during irrigation such as using rain water for crops with modern technology

3.2.2 FORESTRY

Climate change has affected every sector of the economy. Forestry, in this regard, is no exception. This sector is amongst the first victims of heavy rain which causes floods that really wrecks havocs. This in turn affects the biodiversity and can decrease productivity in highest numbers (Oswalt, 2019). Forestry stands out among the top sectors of economic growth and any damage caused to this sector can seriously hamper the overall growth of the economy.

POLICY MEASURES

- Raising awareness in communities to pay attention to the forestry
- Encouraging researchers related to forestry to bring about changes equipment and measures to adapt to and mitigate climate issue. In other words, enhancing adaptive mechanisms.
- Projects of afforestation and reforestation to be carried out on mass scale across the country with plantation sponsored by the government. Deforestation is to be discouraged at all cost which can expose the forestry to the negative impacts of climate change.

3.2.3 WETLAND

In Pakistan ecological system, the wetlands play a vital important role. The global climate change is affecting the shorebirds habitat, the migratory birds and waterfowls. Against this backdrop, it is important to enhance those wetland-dependent areas to mitigate the negative consequences.

POLICY MEASURES

- Sustainable management system with provisions of conservation
- Steps towards the conservation of wetlands especially in grazing and agrarian regions
- Measures of deforestation to be taken and discouragement of cutting of timber in wetland areas

3.2.4 BIODIVERSITY

The rapid increase in earth temperature is causing some of the species to adapt to the ecosystem which now demands resilience. Therefore, to protect, restore, and conserve this sector, the government of Pakistan needs to take the following policy measures on urgent basis to mitigate the causes of the climate.

POLICY MEASURES

- For the conservation of the biodiversity, botanical gardens, zoos, and seed banks are to constructed and restored to save endangered species
- Help from indigenous communities can play positive role in restoring the ecosystem which they have been protecting for many centuries
- While exploiting the natural resources, measures needed to be taken regarding biodiversity

3.2.5 ARID AND HYPER ARID REGIONS:

Desolate tract dwellings and habitats of Pakistan are within the limelight of being vulnerable to the climate change. These lands are in utter need of model to the climate changes. For this purpose, government must take required measures to keep away from certain occasions that may result in the destruction of environment.

Policy Measures:

- Ensuring natural barriers through plantation and formation of mangroves and different suitable trees to save you soil from erosion and to decrease the impacts of cyclones and tsunamis
- Protection of river water glide to switch the vitamins and sediment back to the marine water

- Evaluation of climate trade threats and adaptation of measures to govern the capacity influences on the fishing region

3.2.6 DISASTER PREPAREDNESS

The climate change and related failures are considered to be boom in the years to come. This specially consists of the excessive climate occasions like cyclones, floods, droughts, land sliding, heavy rains, soil erosion and many others. The city flooding happens on the whole because of the congestion of storm drainage. Like different states of South Asia, Pakistan is likewise on the brick of risky harm befallen through the climate change troubles. To deal with this issue of climate change and its destructive affects in phrases of catastrophe management, authorities of Pakistan should take important steps.

Policy Measures:

- The framework of national catastrophe chance control Framework given by means of NDMA should be implemented by means of allocation of financial resources.
- The typhoon drainage potential of huge towns like Lahore and Karachi with floods reports ought to be redesigned and upgraded in view of the rainfall occasions
- Evaluation and reimbursement control encompass policy of loss and harm after disaster and its rehabilitation

3.3 SOCIO-ECONOMIC MEASURES

3.3.1 POVERTY

Climate change at one side is a severe threat to the existence and other side to the development. The chance is expanded within the nations which might be underdeveloped and developing specifically as the lifestyles of human beings are already depressing and with the climate change screw ups the impacts are sever on bad human beings.

Policy Measures:

- Integration of monetary regulations with the climate trade related poverty policies
- Climate change adaptation measures need to be taken to reinforce the network for efficient utilization of resolves
- Supporting poor communities to enhance their get admission to to technology which might be for the betterment of crop manufacturing

3.3.2 GENDER

Humans disadvantaged of maximum of the sources are the inclined and susceptible phase of the society and as they get the least share so they are possibly to get affected more by way of the climate change influences. In Pakistan, girls network is taken into consideration extra affected by the climate trade as mainly rural ladies stumble upon with harsh climate as involved in the agriculture sector. The climate is getting harsh and underneath this scenario the sports carried out by means of the women positioned extra stress on them.

Policy Measures:

- ensure to take steps inside the discount of vulnerability because of the climate exchange to the women running in agriculture region and via so, take delivery of their essential position in at national stage
- The research within the situation need to be appreciated and importantly on the identify of gender-differentiate impacts of climate change
- adaptation measures must be formulated retaining in view the gender sensitive criteria and indicators because the maximum vital a part of the climate change policy

3.4 CLIMATE CHANGE MITIGATION

Green house gasoline emissions are low in Pakistan in comparison to other states of the world and to international requirements. The policy explains that in 2008, the green residence fuel (GHG) emissions were 310 million heaps of carbon

dioxide. The strength quarter is the largest source of greenhouses gases which accounts for fifty one% of emissions and the second largest is 39% of agriculture quarter (Fawzy, Doran, & Rooney, 2020). The discount is focused so that mitigation measures can be taken under productive efforts in each commercial and agriculture sector.

3.4.1 ENERGY

Pakistan has much less reliance at the coal enterprise but more at the natural fuel and furnace oil that is the reason that carbon dioxide emission in Pakistan is manner less than the arena. As herbal fuel and furnace oil both are with lowest carbon intensity and coal is of highest carbon depth.

However, the dependency on natural gas and oil, resulting in depletion of these reserves to a volume that it is going to be hard for the country of Pakistan to maintain the level of production for longer time. The handiest fossil gas useful resource left in a more size is coal with an estimate of 185 billion tons via 2012 (Akalin, 2017).

POLICY MEASURES:

- The unfavorable outcomes of hydropower initiatives and the community issues must be addressed and resolved
- Renewable technologies must be introduced also the new methods of the use of wind, sun and geo thermal strength ought to be discover
- Trainings and expertise transfer for clean power installations like near-0 emission generation and pressurized-fluidized-mattress-combustion for the coal reserves of the nation

3.4.2 POWER EFFICIENCY AND ELECTRICITY CONSERVATION

To acquire the dreams of economic improvement, discount of carbon emission and climate change mitigation intention, there's a dire need to paintings for strength performance and its conservation with the price effective ways of strength deliver. The authorities shall take following measures to soak up the answer.

Policy Measures:

- Strive in retaining electricity in all sector and advent of green monetary reforms in extraordinary actors to acquire the reduction in carbon emission
- Formation and enforcement of laws related to the strength conservation and performance
- Energy efficiency furl consumption need to be obligatory by the usage of quite like minded devices progressively

3.4.3 TRANSPORT:

The shipping sector has additionally been observed in playing its element when it comes to emission growth of carbon dioxide inside the environment. Nevertheless, it's far vital to manipulate this type of pollution. This is because of the gradual development and an unacceptable development in the technology associated with delivery.

POLICY MEASURES:

- For the street delivery device, renovation of vehicles for fuel efficiency and reduction emission by using provision of fuel efficient for transport gadget. Additionally, making laws which can be enforced strictly to meet the standards of emission reduction. Further, improvement of mass transit structures in metropolitan cities. Furthermore, the tasks of CDM for shipping ought to be promoted and that could make possible by means of giving incentives for discount emission and surroundings pleasant transport. In addition, use of compressed natural gas and its test and balance with the advent of latest technologies which might be friendly to herbal environment. In preference to the usage of too many automobiles, people must be aware to apply bicycles and on foot shorter distances.
- For the aviation gadget, the national airlines should not forget the gasoline performance with minimum carbon emissions; the global Civil Aviation company (ICAO'S) must support the reduction emission by means of handling the air traffic lines and routes by way of lowering the flight instances and as a consequence less fuel consumption.

Also, the ICAO'S should make sure the tasks of latest regulations and technological strategies that are in high-quality financial interest of the developing international locations like Pakistan.

3.4.4 METROPOLIS PLANNING

There are socio financial implications inside the town making plans while the climate exchange is taken beneath account. This comes beneath two methods; model to climate change and emission tiers due to intake styles. Subsequently, the metropolis making plans is essential to adapt the climate change affects and their mitigation.

POLICY MEASURES:

- CDM have to be applied for the zero emission homes and renewable strength technology
- Rural to city migrations have to be confined via providing higher facilitation within the rural regions
- Vertical land use making plans for the population settlement instead of horizontal making plans
- production of housing societies that are resilient to climate exchange damage and its damaging effects

3.4.5 INDUSTRIES:

The predominant industries in Pakistan together with textile, fertilizers, sugar manufacturing unit, cement and steel are 6% of the full GHG emissions contribution in the country. Those commercial regions emission is basically quarterly responsible for the emissions in energy quarter. Thus, there's a want to take numerous measures in decreasing the emission for long term

POLICY MEASURES:

- monetary incentives will be supplied on the way to lessen emission from the commercial approaches and replace the generation
- Voluntary hints are required to receive for company social responsibility over carbon emission efforts
- purifier production strategy have to be promoted with the aid of integrating the efficient use of inputs in electricity, water and uncooked materials

3.4.6 AGRICULTURE AND FARM ANIMALS:

About 39% of the totals GHG are considered to be emitted from agriculture and livestock of Pakistan (Hussain, Butt, Uzma, Ahmed, & Yousaf, 2020). These emissions contain methane and nitrous oxide originated from primary 4 sectors. Those are enteric fermentation in cattle, cultivation of rice, nitrous fertilizers, and manure management.

POLICY MEASURES:

- Merchandising of scientific studies and sustainable inexperienced revolution through technological innovations
- Exploring new strategies for discount in freeing nitrous oxide from agriculture
- Encouragement, adaptation and development of latest breeds of farm animals and agriculture
- Cultivation of plants using renewable electricity assets as the country needs to satisfy the agriculture and livestock demands

3.4.7 CARBON SEQUESTRATION AND FORESTRY

Despite the fact that the forestry and different land sections of Pakistan aren't contributing more than 3 percentages as stipulated by using TFCC document. However, the emissions have the capacity to increase. Consequently, stopping and mitigating measures are had to be taken through afforestation and deforestation.

POLICY MEASURE:

- Legal guidelines should be strictly formulated and accompanied towards the unlawful deforestation
- Provision of incentives and educate masses with alternative measures to save you deforestation
- Monetary help from the worldwide assist like concerning international bank's forest Carbon Partnership

3.5 CAPACITY BUILDING

In South Asia, Pakistan is one of the maximum at risk of climate change affects and hardly ever organized to save the country and overcome the challenges of coming century when it comes to human aid and capability of its establishments. The missing ability is due to the restrictions associated with schooling, opportunities, financial troubles, unskilled loads, and lack of technology and plenty greater.

POLICY MEASURES:

- In terms of Institutional mechanisms; established order of federal and provincial degree ministries below which the fee of climate change have to be formulated. A monitoring and check and stability mobile must additionally be shaped with the intention to look after the inter-ministerial and inter-departmental selections making. Also, the establishments must be reinforced by using related to the worldwide network to strictly put in force the policy via institutions.
- For the capability enhancement; teaching the younger scientists by using sending them for higher research, strengthening of climate change institutes financially, technologically and thru CDM, status quo of research and collecting advantages from worldwide technological improvements, schooling of the climate change professionals within the ministry and different establishments, capacity constructing via taking measures in catastrophe preparedness, mitigation and vulnerability assessments and so forth.

3.6 REGIONAL AND INTERNATIONAL COOPERATION

Because of the climate change which is a global issue. However the influences are of greater danger to the developing states. This is mainly due to the missing capacity of socioeconomic improvement within the developing international locations. Therefore, it's far essential for the developing states to paintings together to prevent and to cope up with the impacts. South Asia is an area susceptible to the climate change impacts and accordingly, there's a dire need to include the global network inside the work of climate change and its disasters that are tough the existence on earth.

POLICY MEASURES:

- status of the state on the international degree businesses like UNFCCC
- develop strong members of the family with the nearby and global enterprise so that it will soak up the problem and being identified with the aid of the opposite states
- Collective measures with the nations like Nepal, Bhutan, Kyrgyzstan and other mountainous states to take initiative for the mountainous areas and the glaciers soften and its implications
- teach and consciousness applications on the nearby level to sell inexperienced generation and practices to lower the carbon emission for regional development

3.7 FINANCE

Pakistan is a signatory of many organizations like UNFCC and international bank which qualifies it for financial and technological help. Green climate Fund produced by using the evolved nation have to be secured by using Pakistan as in near destiny the reaction of climate exchange because of the industrialized kingdom can be encountered through it.

POLICY MEASURES:

- A strict and continuous assessment of Pakistan standing role among different developing states to at ease investment
- utilization of already given mitigation and version measures like clean development Mechanism (CDM), model Fund, global Environmental Facility and Carbon trading
- Cooperative civil public society for the financing of implementation of climate trade projects related to adaptation and mitigation

3.9 TECHNOLOGY TRANSFER

The maximum complicated undertaking for any state is to shift the industry on the modern technological solutions to resolve the problem of climate trade. The Cancun conference of UNFCCC agreed to introduce the ways for the switch of technologies from evolved to developing states. The authorities shall take following measures that allow you to find the solution of the difficulty of climate change.

POLICY MEASURES:

- Country-wide priorities should be shaped in a manner that they support the shift to new era which is pleasant for the surroundings
- Promotion of latest innovations within the already in use generation to make it better and effective to implement the climate change regulations
- Primarily based establishments need to be financed and favored to paintings in achieving new era like hybrid motors

3.10 POLICY IMPLEMENTATION

There's a need to adopt an urgent plan for the country to acquire the desired goal of implementation. All of the departments and institutions of climate trade shall recommend a collective attempt plan and an application to put in force the plan. All of the provinces of state need to be involved consisting of AJK, Gilgit-Baltistan and different governments within the policy making plans and movements.

3.10.1 COUNTRY-WIDE CLIMATE CHANGE IMPLEMENTATION COMMITTEE:

The national climate committees at the federal degree so that it will be the chair, under which the sectaries and ministries associated with all the regions stricken by or effect the climate change. Then, there will be members consisting of the additional leader of planning and improvement department. Three representatives from cooperate and civil region are crucial to be blanketed within the committee.

3.10.2 PROVINCIAL CLIMATE CHANGE POLICY IMPLEMENTATION COMMITTEE

At provincial level, chairperson of ministry would be the minister of surroundings. Underneath him there can be extra chief secretaries and secretaries of environment, agriculture, wooded area, irrigation, nearby authorities and public fitness. Basically all those departments which can be related with climate change in any way. This committee may even encompass 3 representatives from corporate zone and civil area every, also 3 experts of the surroundings difficulty.

3.11 STRUCTURAL DISSECTION OF IPCC

3.11.1 INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) was founded in 1988 and its first report came out two years later in 1990. The IPCC reports are treated by scientific community and policy circles as the backbone of our understanding of climate change (Beck & Mahony, 2018). The reports are useful in a way to help governments around the world to mitigate and adapt to climate change. Over the years, our understanding of the climate change has expanded which has resulted in expansion of IPCC scope along its reports. As of now, the IPCC has released six reports. The most recent one was its 6th report back in 2022.

3.11.2 WORLDWIDE PANEL ON CLIMATE CHANGE:

The World Meteorological Organization and the United Nations Environment Program established the IPCC in 1988. It is a global organization whose members represent 195 nations. Since it is the first comprehensive analysis of climate change to be conducted at the global level, all important factors, including those in the economic, socioeconomic, technical, and scientific spheres, are taken into account. It's far the primary ever systematic assessment of climate change at worldwide level.

3.11.3 WORKING GROUPS

IPCC is an enterprise made to assess climate technology. The primary and important objective of IPCC is to strengthen the global response to climate change. It has 3 fundamental running companies, which are at paintings, to signify pathway to mitigate the consequences of global warming and disseminate its wider affects.

3.11.4 THE PANEL AND THE PLENARY PERIODS

The Intergovernmental Panel on Climate Change (IPCC) works at three different tiers. It hosts a plenary consultation wherein they meet once in 12 months and foremost selections are being taken about the price range, IPCC ideas and procedures. The IPCC is a panel that incorporates 195 member governments. Every member of IPCC designates an imperative national factor. The states that do not pick out the focus, IPCC correspondence is directed to the Ministry of overseas workplace. Hundreds of people from relevant ministries, corporations and institutes' specialists attend the meeting from member states and observer companies.

3.11.5 ROLE OF IPCC FOCAL POINTS AND IPCC BUREAU:

Role of IPCC focal points is to prepare and update the listing of countrywide specialists to help put in force the IPCC work program. Furthermore, IPCC Bureau consists of 34 members that provide guidance on clinical and technical elements. The focal point additionally arranges the company of coordinate government comments on the precision of logical and specialized substance and an average logical adjustment of drafts of stories.

3.11.6 EXECUTIVE COMMITTEE:

Right here the position of executive Committee comes into play that ensures the well timed and effective implementation in conjunction with strengthening the coordination between operating groups and undertaking Forces. The advisory individuals are covered as the top of IPCC and the pinnacle of Technical guide Unites (TSU). They meet frequently and these conferences are chaired by IPCC chair. The IPCC product and their working program require eager interest among panel periods and the executive committee addresses the difficulty concerning it.

3.11.7 IPCC AUTHORS AND EXPERTS:

IPCC reports are complete in nature than another common file, that are organized and reviewed by way of loads of authors and experts, who are concerned on a voluntary basis. Those businesses include Lead Authors and Coordinating Lead Authors that provide technical statistics. However, overview Editors advice lead authors in a way to take care of arguable problems. Expert reviewers' position is critical on this context as they validate the accuracy of the reports.

3.11.8 EXPERT REVIEWERS:

Expert reviewers' function is important on this context as they validate the accuracy of the reports. They analyze the reviews inside the wake of medical and technical contents and notice if the reviews are pleasurable the social-financial balance. The evaluation of cutting-edge scenario of climate change related to scientific observes has been dedicated by means of the IPCC for the balance and clarity of the issues. This dedication leads to the two length assessment of every report to reap the intention.

3.11.9 SECRETARIAT:

The secretariat assists and works as coordination for the specific departments of IPCC. It's far placed is Geneva, Switzerland alongside international Meteorological enterprise. The executive support is below the operating of secretariat for all the bodies like plenary, bureau and executive. It's also concerned inside the operating of file and document making. It also manages the believe price range and other budget which also consist of budgeting and control of expenditure and auditing and other guidelines and legal matters concerning IPCC.

SOME OTHER CFUNCTIONS OF SECRETARIAT ARE GIVEN UNDER:

- Provision of records management for the IPCC which additionally entails the instruction of archives and utilization of news in step with the procedure and call for of IPCC.
- Elaborating viable mistakes inside the IPCC protocol with the aid of giving the implementation mechanism specifically in time period of communication method and policy of warfare of hobby present within the IPCC documents.
- In support of IPCC, required duties as consistent with mandate of panel, bureau or the executive are fulfilled by way of the secretariat

3.11.10 TECHNICAL SUPPORT UNITS:

The technical support unit (TSU) basically helps all of the working agencies and the national green house inventories. It helps inside the production of all applicable IPCC merchandise by providing help to specific departments in their technical, clinical and organizational operating.

3.12 COMPARATIVE ANALYSIS OF IPCC AND NCCP

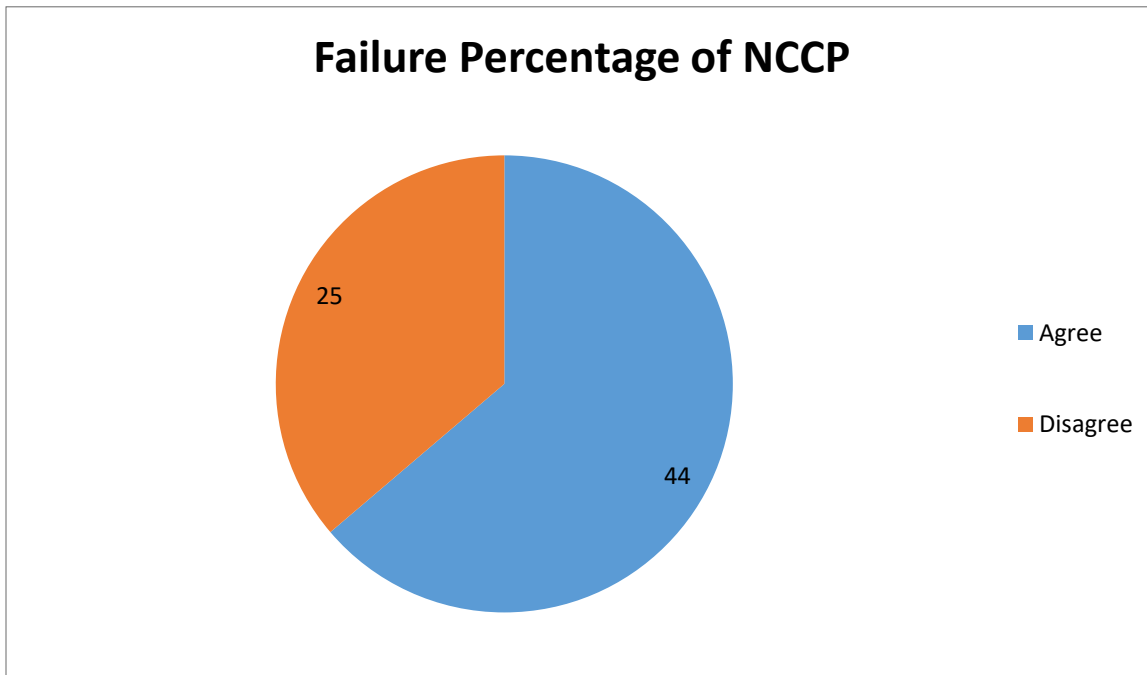
While comparing the two, National Climate Change Policy of Pakistan with that of Intergovernmental Panel on climate change, a difference has been observed in phrases of control. In their contrast NCCP is non-mounted and extra approximately a theoretical perspective of all the natural resources and approximately the climate exchange recognition with some policy measures. But the variation and operating sample of policy is missing, while, IPCC works in a detailed procedure consisting of the subject choice to the document making.

CHAPTER FOUR**LIMITATIONS OF NCCP WITH REGARD TO IPCC****4.1 DATA COLLECTION**

The National Climate Change Policy (NCCP) was extensively formulated but lacked the much-needed support. Consequently, it is not implemented in letter and spirit. A survey was carried out to understand the hurdles in its way of implementation. Detailed questionnaires were asked from the selected audience in Peshawar and Islamabad. Besides, expert from academia both in public and private sectors were interviewed. The qualitative data collected has been analyzed to substantiate the findings of the study.

4.2 SPSS AND LIKERT SCALE

For the sake of knowledge and information, SPSS is software which is used to quantify close-ended questions. Along SPSS, Likert Scale has been used to rate the response from respondents during the survey/interviews. In this way, the resultant values are being denoted with "Strongly Agree", "Agree", "Strongly Disagree", "Disagree", and "Neural". Similarly, they are represented by numbers such as for "Strongly Agree" there is 5, for "Agree" there is 4, for "Neutral there is 0, for "Strongly Disagree" there is 1, and finally for "Disagree" there is 2. These are shown in the following histograms with x-axis denoting the numerical while the y-axis denoting the frequency of the respondents with regard to the questions being asked.

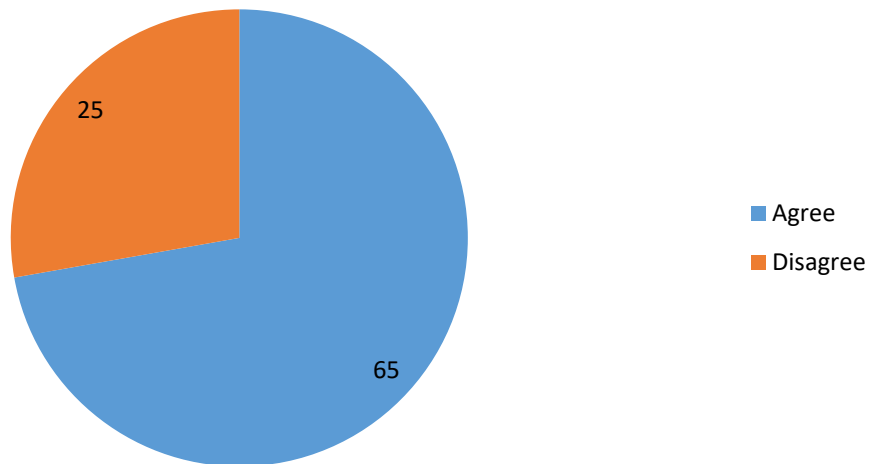


The graph represents the success of National Climate Change Policy because most of the respondents have given a positive response. Out of the 25 respondents, 44% agreed to the point that NCCP has not been implemented in letter and spirit while 25% disagreed as they think that some of the policy measures have been taken to implement the goals of NCCP.

4.3 INTRA-INSTITUTIONAL HURDLES

There are various hurdles in institutions associated with the Ministry of Climate Change. About 65% of the respondents were of the view that intra-institutional hurdles are becoming a stumbling block in its way of implementation. While interviewing Senator, Seemee Ezdi, Chairperson Senate Standing Committee on Climate Change, she was of the view that projects are allocated on the basis of pure merit and that there are rifts within institutions but overall the honorable members are committed to strengthen the institutions to implements the policy goals as stated in the National Climate Change Policy (NCCP) (Ezdi, 2023).

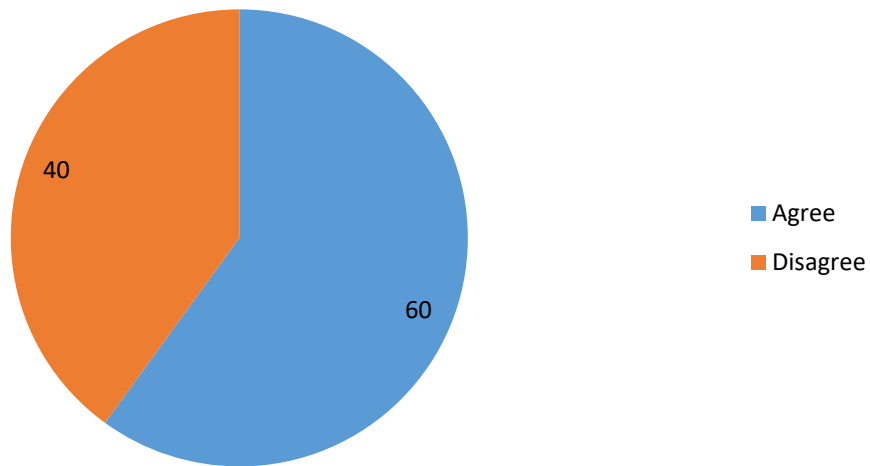
Percentage of Institutional Hurdles



4.4 LESSER BUDGET ALLOCATION

When it comes to budget allocation, out of the 25 respondents, 60% of them agreed to lesser budget allocation being the hurdle in successful implementation of National Climate Change Policy (NCCP). According to Mr. Cheema, who is working at the Environmental Protection Agency, the government(s) policies are aimed at economic recovery among other social and economic indicators which is hindering the process of budget allocation (Cheema, 2022).

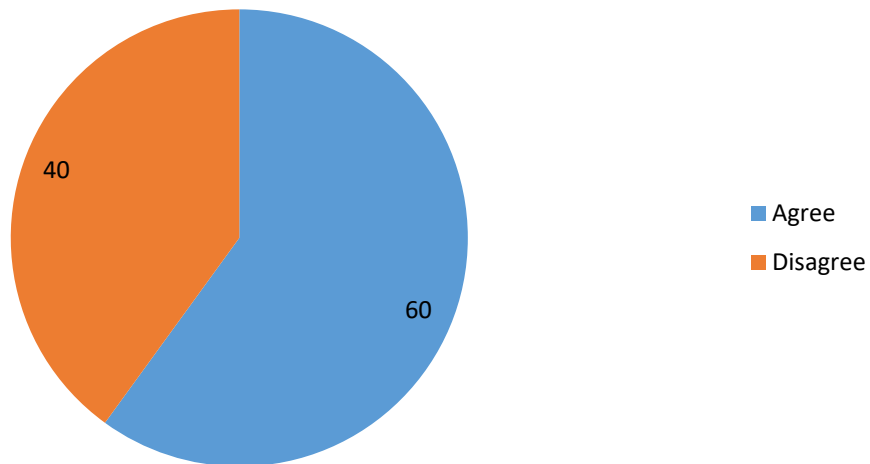
Percentage of Lesser Budget Allocation



4.5 EFFECTIVE USE OF ALLOCATED BUDGET

The allotted budget is lesser for plenty experts than it need to be. In the course of the interviews, basically the perception was that finances aren't always effectively utilized. At the same time as interviewing Ms. Munaza Hassan, she gave the evaluation of budget and informed that the finances given every year have in depth report (Hassan, 2023).

Percentage of Effective Use of Funds



4.6 LACK OF AWARENESS IN THE GENERAL PUBLIC

Climate change is a phenomenon not understood by way of many and on the same time overlooked with the aid of a lot. 60% humans agree and 28% strongly accept as true with the issue that commonly the public isn't always a great deal aware of this issue. Folks that do now not agree with it, have the argument that there is a lack of will on the part of popular public and authorities both.

The senior inspector Imtiaz Hussain of Environmental Protection Agency consents that there's a loss of clinical and technical awareness among human beings because of which their activities aren't environmental friendly (Hussain, 2023). Dr. Saleem Ali who is a part-time Professor of Environmental research at the University of Vermont's Rubenstein faculty of herbal sources, explains that there's a want to evaluate risk and that the outcomes of it must spread to most people so that human beings may study from it (Ali, 2023). Similarly to that, Dr. Shaheen Akhtar, associate professor has also pressured upon the community participation in terms of coping climate trade issues and adapting a lifestyles fashion that is nature friendly (Akhtar, 2023).

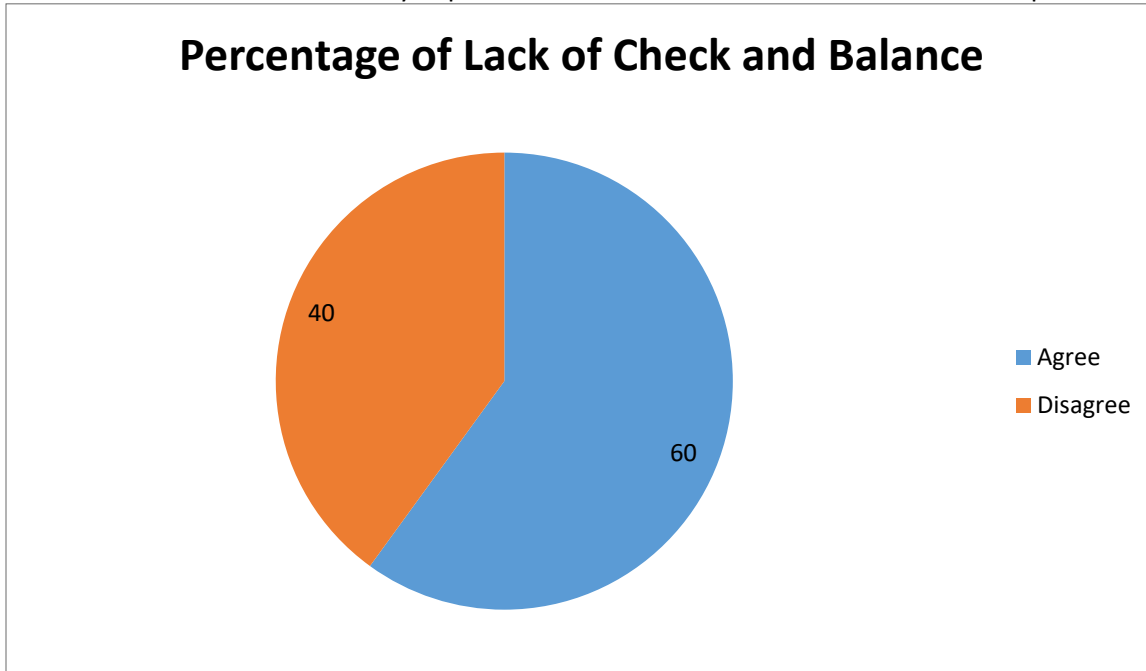
4.7 LACK OF COORDINATION BETWEEN DIFFERENT ENVIRONMENTAL PROTECTION ORGANIZATIONS:

The lack of coordination system in all of the establishments of Pakistan and is taken into consideration as one in all the most important problems. This lack of information sharing and coordination among the stakeholders is one the biggest hurdles of climate change in Pakistan. Subsequently, price giving to the professionals of climate change at the same time as making policy and its implementation plan is vital (Malik, 2023).

Prof. Dr. Shaheen from National Defense University also gave strain at the significance of coordination mechanism. In keeping with her, 'move-sectional method' is required for the better policy implementation and missing in this sector has made a large gap (Akhtar, 2023). Similarly, the specialists in Environmental Protection Agency additionally assent that there is disagreement on how to recognize coordination in some of the institutions and a race to get more working credit nationally and across the world.

4.8 LACK OF A CHECK AND BALANCE SYSTEM

60% of the respondents agreed that there may be a gap for the check and balance system inside the policy implementation which is any other crucial hurdle for policy processing. In keeping with the Minister of National Assembly Dr. Haider, there is a need to have test and stability in particular at the initiatives that start and are not persevered (Haider, 2023).



Ms. Munaza Hassan from the status Committee on climate mentioned take a look at and balance machine lacking in the climate change and consistent with her, the outdoor strain is required for you to attain a obvious gadget (Hassan, 2023). Prof. Dr. Ahmed Ijaz Malik also emphasized on the law in terms of climate change because the legal guidelines will make large difference in appearing the challenge and satisfying the projects. This way a obvious check and balance gadget might be accomplished and assessment of rules and initiatives may be genuine (Malik, 2023).

Professor Dr. Shaheen Akhtar of NDU explicitly said that governance is lacking because of the political perception about climate is that it isn't always a much attention needed situation. Test and stability gadget can best be made whilst there may be a priority given and a chance mapping is performed to regulate the belief of the situation and taking it in predominant streamline (Akhtar, 2023).

4.9 LACK OF WILL ON THE PART OF THE CENTRAL GOVERNMENT

After the 18th amendment, the climate change ministry became dissolved to provinces and subsequently, the imperative authorities despite the fact that performs its part however the provinces are handiest advised, the motion must be completed by the respective provincial governments. Due to which, critical government has no longer been considered as the key actor. The Billion Tree Tsunami challenge is a clear instance to his attention toward environmental protection (Haider, 2023).

Professor Dr. Shaheen of National Defense University, Islamabad, additionally emphasized on the deficiency at the a part of imperative authorities as consistent with her the incentives must be provided through the important authorities so that you can draw the eye of provincial government to the difficulty of environmental safety (Akhtar, 2023).

4.10.1 FINANCIAL STRESS:

When it comes to the problem of Finance strain, 10 respondents have absolutely cited it as a biggest hurdle. It has been discovered that Pakistan is beneath severe financial stress. Due to its monetary guidelines, it is unable to provide a extra finances to areas like weather change.

4.10.2 INSTITUTIONAL TUG OF WAR:

Institutional tug of warfare has been given the weightage of 48%. Throughout the interviews the respondents from the substitutions of climate trade have mentioned that a continuous institutional tug of warfare is gift which has confined the business enterprise to paintings productively. This tug of struggle is largely because of the prominence and strength needed to be acquired by way of the Ministry of weather change.

4.10.3 LOSS OF CHECK AND STABILITY DEVICE:

There's a loss of checking balance gadget in it is also taken into consideration as certainly one of the biggest hurdle within the implementation of national weather exchange policy of Pakistan. Forty eight% of the population that's the 12 in matter it has decided on loss of test and balance gadget as the most important hurdle.

4.10.4 LACK OF DEPARTMENTAL WRIT:

At some point of an interview the departmental writ become considered as absent and ensuing in in the non-implementation of policy. If there may be a written rule for every department to paintings on those widespread working tactics there will be a high chance that the institutions may be cautious in running and will be productively performing their duty.

4.10.5 LACK OF INTRA-MINISTERIAL COORDINATION:

Lack of intra ministerial coordination is again a hurdle that has been considered by using 32 % of the total populace which is the rely of 8 people out of 25. The intra- ministerial selections basically take the initiatives there are speculated to be underneath weather change ministry. Another important problem of Finance is also connected with the inter-ministerial troubles. Some Ministries are given more budgets and other are taken as a right.

4.10.6 LACK OF LEGISLATION:

There may be a need to have legislation at the ground of strict guidelines and legal guidelines. Those laws should be followed via the check and stability government a good way to punish folks who aren't enjoyable the legal guidelines related to climate exchange.

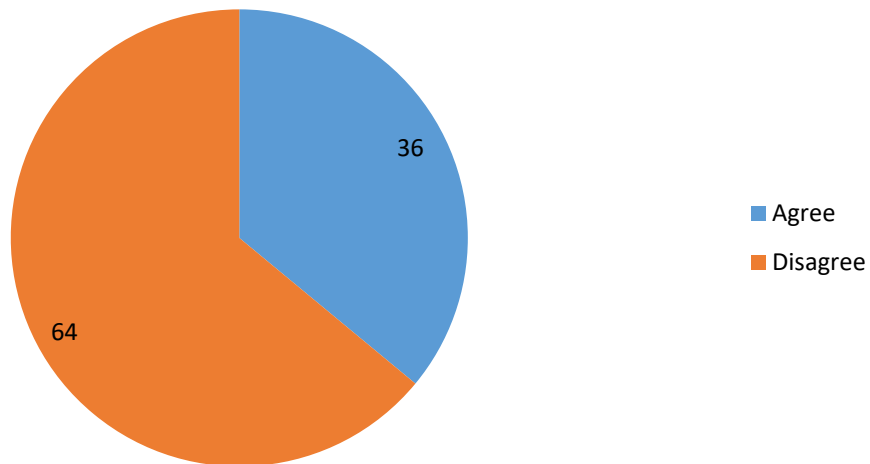
4.10.7 LACK OF RESEARCH:

32% of the 25 respondents have selected the issue of lack of research within the situation of climate change. Consistent with the interviews taken there's a huge hole inside the literature of weather exchange or environmental politics. Even though, the climate change has an extended lasting impact on social and economic life of human organisms still the research in this place are neither appreciated nor been taken into consideration crucial.

4.10.8 LACK OF WILL:

36% of the 25 responders selected the government's lack of willingness. According to the interviews, political and social levels of awareness have never had a difficulty. However, the lack of motivation to address Climate Change and enact environmentally friendly policies has led to the failure of policy implementation.

Percentage of Lack Will on the part of Govt.



4.10.9 PROVINCIAL DIFFERENCES:

The respondents also pointed out that since the passage of the 18th Amendment, the provinces now have jurisdiction over climate change. The provinces are not doing their duties effectively since they have been given a great deal of responsibility that has never been done before. Additionally, the implementation has failed since the provinces are never on the same page. The implementation committee that was meant to be created following the 2012 policy's establishment is still unformed.

4.11 RECOMMENDATIONS FOR THE SUCCESS OF NCCP DESIRES:

The respondents also receive a list of recommendations as the aforementioned obstacles are clarified in light of the comments given. Despite being the government's responsibility, there are other actors involved in the process of implementing policies. Stakeholders that are not directly involved in the system attempt to sway it in their favor. Consequently, it is essential to have a strong implementation strategy.

4.11.1 PROVINCIAL COMPLIANCE WITH FEDERAL GOVERNMENT:

It is crucial to make sure the provinces follow the instructions of the federal government. This is due to the fact that a state must compel its adoption of necessary policy measures. In that case, the center ought to assume leadership of a particular issue for the benefit of everybody. Additionally, there must be national meetings that involve representatives from every province and have a thorough discussion of various climate change-related issues. In order to foster a shared perception among the provinces that is also aligned with the central government, these meetings must be held frequently.

4.11.2 FUNDING FOR PROJECTS:

One of the responders' primary advice is to allocate the necessary funding for the project. Essentially, 15 out of 25 respondents, or 60%, chose it. There is a significant amount of resentment directed at the government from the institutions' climate change ministry because the ministry and some institutions have not received funding that may

enable them to engage in various environmentally friendly programs. In general, initiatives related to the climate change problem required a sizable sum of money.

4.11.3 EMPOWERMENT OF SUB-INSTITUTIONS:

Another suggestion was made in relation to intra-ministry concerns where the sub-institutions requested autonomy and self-determination. These institutions claim that it takes time to transfer a file from one location to another in order to reach higher authorities.

4.11.4 ACADEMIC RESEARCH:

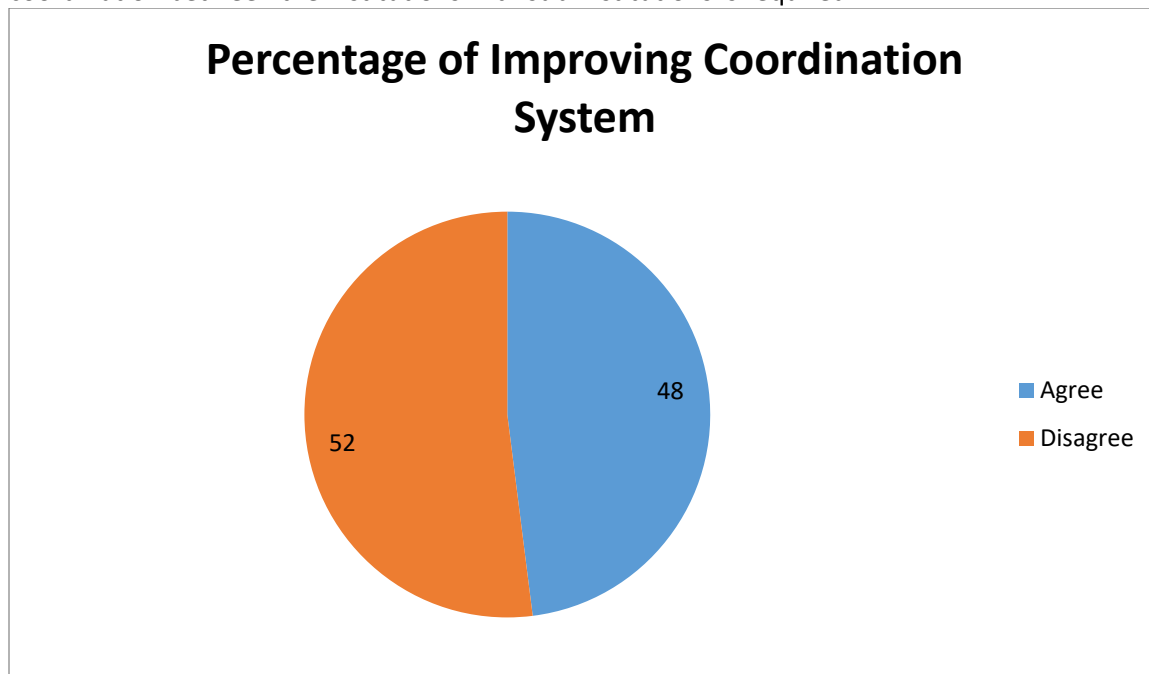
40% of the survey participants believed that more academic research on climate change is necessary. They concurred that including academia would welcome fresh research findings that would aid decision-makers in formulating priorities for policy.

4.11.5 LEGISLATION:

Twelve out of the 25 respondents made the case that Pakistan's climate change policy should be implemented in accordance with strict rules. Laws will make industries more competitive, reduce the cost of supplying energy, and reduce emissions from industries associated to energy.

4.11.6 COORDINATION SYSTEM:

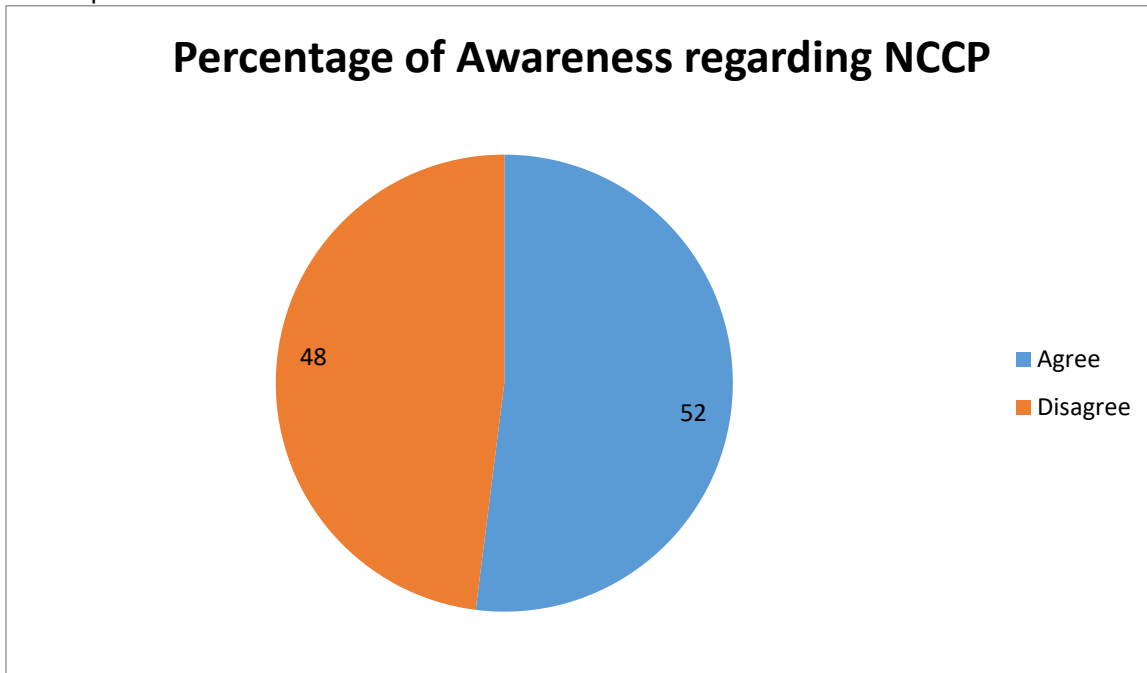
12 out of 25 respondents, or 48%, said there should be better coordination between the federal government and the provinces. Their policies must coincide, and the provinces must respect the center's decisions made for the improvement of the climate. Therefore, there is a need for improved governance of the climate change issue. A mechanism of coordination between the institutions with sub-institutions is required.



4.11.8 WILL FOR CLIMATE BETTERMENT:

Lacking and distorted are knowledge and perceptions concerning climate change. Because of this, no system or method has been employed to carry out the policy. Implementing the policy will demand a certain amount of commitment to the

environmental sector. There is knowledge of climate change and its negative effects, but information alone cannot provide a remedy. It will matter if you have a strong desire to succeed in the field by taking action. The producers, the consumers, and the government all need to have this strong will. Because it is a collective problem, climate change can only be tackled via cooperation.



CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

Climate change is a reality, not merely a phenomena. It has created a terrible environment in the natural world. The environment has been harmed by anthropogenic activities, which has led to temperature increases, weather changes, sea level rise, glacier melt, floods, and other problems. These are the outcomes that have put earthly life at peril. These spheres of existence are impacted by and have an impact on every other social, economic, political, and even military action. Political authorities exhibit a particular response to catastrophic disasters, and the Ministry develop policies with input from various stakeholders.

The actual policy is thought to be well-written and precise. Still, there is a pressing need for changes that take into account the present and the future ramifications. The most crucial thing to change is how politics see climate change. Because of this, information about resource management in the use of renewable energy sources and the advantages associated with it needs to be spread. All sectors must be considered in order to conserve energy. Between science and policy, there should be a chasm. And only when there is a threat mapping effort and commitments to the fight against climate change can this be accomplished.

Additionally, it would be crucial to comprehend Pakistan's vulnerabilities and possible growth sectors. It is necessary to boost both the budget in accordance with the projects and the economic results and advantages from foreign help. The

state should move toward the transfer of technology gradually and methodically. And all organizations, whether central or provincial, must collaborate. Projects that have already begun must be improved and continued. The government and institutions should take on new research, laboratory, and technological projects. Only with the desire to change can a policy be put into action. Additionally, it must be kept in mind that the policy was created for the general population, not so that political figures and authorities would be interested. Every living thing on planet is at danger from climate change, which is fairly clear. If it is not given the attention it deserves, it will weaken the foundation of the environment and affect every other industry. Against this backdrop, the National Climate Change Policy of Pakistan (NCCP) is a comprehensive policy aimed at tackling the threat of climate change. Theoretically speaking, it has incorporated every sector and has taken into consideration the required and necessary steps towards mitigating the vulnerabilities of climate change. However, there exist varieties of hurdles ranging from intra-institutional to inter-provincial and budget allocation which has been a stumbling block in its implementation. Additionally, the National Climate Change Policy of Pakistan (NCCP) has been clearly analyzed viz-a-viz the Intergovernmental Panel on Climate Change (IPCC) to find possible shortcomings in the policy. The study found that most of the requirements have been met and is consistent with the international standards. However, some of the commitments have not been met on the part of the government especially due to the poor state of the economy which is why it has not been implemented in letter and spirit.

BIBLIOGRAPHY

- (2021). *National Climate Change Policy*. Islamabad: Ministry of Climate Change.
- UN Environment Programme. (2021, November 09). Retrieved April 26, 2023, from https://www.unep.org/explore-topics/climate-action/what-we-do/climate-action-note/state-of-climate.html?gclid=EAlaIQobChMIwO29jdDO_glViKfVCh3zXgw5EAAAYASAAEgLI6PD_BwE
- Climate MDPI. (2023, April 30). Retrieved April 30, 2023, from MDPI: <https://www.mdpi.com/1660-4601/19/16/9941>
- Ahmad, W. (2020). Assessing and Prioritizing the Climate Change Policy Objectives for Sustainable Development in Pakistan. *Symmetry*, 1-12.
- Ai Sian Ng, M. O. (2017). Toward a Theoretical Framework for Studying Climate Change Policies: Insights from the Case Study of Singapore. *Sustainability*, 1-21.
- Akalın, M. (2017). Supercritical fluid extraction of biofuels from biomass. *Environmental Chemistry Letters*, 29–41.
- Andrew G. Turner, H. A. (2012). Climate change and the South Asian summer monsoon. *Nature Climate Change*, 587–595.
- Aslam, M. A. (2021). *NCCP Report*. Islamabad: Ministry of Climate Change.
- Banuri, T. (1993). Implementation of the Environmental Protection Ordinance. *Sustainable Development Policy Institute (SDPI)*, 50.
- Beck, S., & Mahony, M. (2018). The IPCC and the new map of science and politics. *WIREs: Wiley Interdisciplinary Reviews*, 23-35.
- Chaudhry, Q. U. (2017, June 20). *Climate Change Profile of Pakistan*. Retrieved February 18, 2023, from Asian Development Bank: <https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>
- Fawzy, S., Doran, J., & Rooney, D. W. (2020). Strategies for mitigation of climate change: A Review. *Environmental Chemistry Letters*, 2069–2094.

- Hussain, M., Butt, A. R., Uzma, F., Ahmed, R., & Yousaf, B. (2020). A comprehensive review of climate change impacts, adaptation, and mitigation on environmental and natural calamities in Pakistan. *Environmental Monitoring and Assessment*, 990–1016.
- Kengo, Y. (2022, April 28). Pakistan updates National Climate Change Policy. *Envilience Asia*.
- Khan, A., & Samiullah. (2015). *Disaster Risk Reduction Approaches in Pakistan*. Lahore: CHAP.
- Li1, L. (2016). An Overview of Error Management Climate. *American Journal of Climate Change*, 623-626.
- Linden, S. v. (2015). Intrinsic motivation and pro-environmental behaviour. *Nature Climate Change*, 612-613.
- M. Staubwasser, F. S. (2013). Climate change at the 4.2 ka BP termination of the Indus valley civilization and Holocene south Asian monsoon variability. *AGU Advancing Earth and Space Sciences*, 456-460.
- Najam, A. (2015). Developing Countries and Global Environmental Governance: From Contestation to Participation to Engagement. *International Environmental Agreements: Politics, Law and Economics*, 303–321.
- Niaz, I. (2022). *Downfall: Lessons for our Final Century*. Islamabad: CSCR.
- Oswalt, S. N. (2019). *Forest resources of the United States, 2017: A technical document supporting the Forest Service 2020 RPA assessment*. Washington: U.S. Department of Agriculture (USDA).
- Samson, E. (2023, January 27). Is intrinsic motivation enough to change our sustainability behaviour? *The Forum Network*, pp. 1-10.
- Sattar, U. (2022). A Conceptual Framework of Climate Action Needs of the Least. *International Journal of Environmental Research and Public Health*, 1-13.
- Sayeeda Amber Sayed, P. A. (2014). Flood disaster profile of Pakistan: A review. *Science Journal of Public Health*, 144-149.
- Shahid, F., & Adnan, M. (2021). Climate Change: Impacts on Pakistan and Proposed Solutions. *Pakistan Social Sciences Review*, 223-235.
- Siddique, J. (2022, July 7 Thursday). Pakistan's Climate Challenges Pose a National Security Emergency. *United States Institute of Peace*, p. 12.
- Söderholm, P. (2012). Modeling the Economic Costs of Climate Policy: An Overview. *American Journal of Climate Change*, 14-32.
- Sprinz, D. F., & Luterbacher, U. (2001). *International Relations and Global Climate Change*. Cambridge: The MIT Press.
- Yusuf, S. (2011, May 11). Pakistan's first climate change policy ready. *Dawn*.

INTERVIEWS

- Akhtar, D. S. (2023, July 21). Discussion on governance in Pakistan. (A. Jaffery, Interviewer)
- Ali, D. S. (2023, July 21). Discussion on Evaluation of Climate Change Risks. (A. Jaffery, Interviewer)
- Saad, & Haye, A. (2023, July 18). Discussion on Federal Governemnt Responsibilities. (A. Jaffery, Interviewer)
- Malik, D. A. (2023, July 20). Discussion on the system of check and balance in Pakistan. (A. Jaffery, Interviewer)
- Haider, D. (2023, July 16). Discussion on Lack of Check and Balance. (A. Jaffery, Interviewer)
- Hassan, M. (2023, July 17). Discussion on Effective use of Funds. (A. Jaffery, Interviewer)
- Hussain, I. (2023, July 14). Discussion on Lesser Budget Allocation to NCCP. (A. Jaffery, Interviewer)
- Cheema, M. (2022, January 10). Discussion on Lesser Budget Allocation to implementation of NCCP. (A. Jaffery, Interviewer)
- Ezdi, S. (2023, June 23). Discussion on Intra-Institutional Hurdles to NCCP. (A. Jaffery, Interviewer)