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**Comparative Analysis of Climate Change Policies: Pakistan VS.
Global Approaches**



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Comparative Analysis of Climate Change Policies: Pakistan VS. Global Approaches

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Abstract

Purpose: The current study compares global climate change policy to Pakistan's national climate policy in order to investigate global and national priorities in the context of carbon emission, air pollution, gender and smog under the adaptive management model.

Methodology: The United Nations Climate Change Policy Papers and Pakistan's most current Climate Change Policy 2021, were analyzed in this work utilizing keyword search methods for contextualization in the qualitative data analysis program NVivo 11.

Findings: The findings show that Pakistan's climate change strategy is highly similar to global climate change policy in terms of carbon emissions, a little less so in terms of gender, but not in terms of air pollution. It is concerning that smog, a serious problem in Pakistan, is not on the agenda of global climate change policy.

Unique Contribution of theory, practice and policy: Through adaptive management, the research identifies specific gaps where national policies diverge from global priorities. For instance, the model helps to highlight the lack of emphasis on smog in global policies, a critical issue for Pakistan, thereby suggesting areas for improvement and alignment. The study suggests that the Pakistani government should make efforts to address this issue on a worldwide scale in order to solve the problem.

Keywords: *Climate Change Policy, Carbon Emission, Air Pollution, Gender, Smog*



1. INTRODUCTION

The continued release of greenhouse gases, or GHGs, is causing changes in various climatic dangers that may have an impact on humans (Mora et al., 2018). Patricia Espinosa, Executive Secretary for the UN Climate Change Secretariat, claims that there is “an opportunity for nations to green their recovery packages and shape the twenty-first century economy in ways that are clean, green, healthy, safe, and more resilient” (Corfee-Morlot et al., 2021). In the words of Willson and colleagues (2018), an important focus among government initiatives for climate change mitigation is changing the conduct and leadership practices of the general public and other stakeholders. There has been little research and understanding on how mitigation and adaptation to climate change information should be presented and distributed. The findings demonstrate, however, that through focusing on a specific problem, the marketing effort managed to reposition climate change messaging to practical management and produce higher engagement than generic climate change messages. Countries such as China, on the other hand, are establishing nationwide climate change policies. Most Chinese towns and areas share the goal of promoting low-carbon development, enhancing resistance to climate change, and balancing economic growth and action on climate change (Wang et al., 2021). However, in this study, we will compare global climate policy with Pakistan's national climate policy by concentrating on carbon emissions, gender contributions, air pollution, and smog, which will help us find areas of alignment and misalignment between both policies. The current research will also serve as an important turning point in determining global and national climate change objectives and priorities of developed and underdeveloped countries.

1.1 Carbon Emission

Since the UK approved the legislation known as the Climate Change Act (CCA) early 2008, a number of states have implemented comparable laws, albeit using a slightly distinct approach. These examples all have one thing in common: they are all frameworks laws aimed at aiding environmental mitigation by creating and implementing techniques to reduce emissions of greenhouse gases (GHG) (Nash et al., 2019). The study indicates that the most controversial climate policies on the developing globe are those that produce distributional conflicts in which strong, non-poor players face substantial losses from their fossil fuel-based activities. However, the data contradicts the notion that emissions and poverty reduction are conflicting goals (Rennkamp, 2019). Closing the gap between current environmental mitigation efforts and those needed to fulfil the agreement's temperature targets, on the other hand, requires a significant rise of political ambition (Dominioni, 2022). A good political context, public attention, and an appropriate cost will be required for the implementation of a carbon tax (Patel et al., 2020). Any globally successful decrease in agricultural emissions, on the other hand, necessitates global pacts for agriculture to limit emission leakage, and methods for decreasing emissions of greenhouse gases on consumers may be required (Fellmann et al., 2018). However, the difficulty is that ambitious climate policies aimed at reducing carbon emissions are more likely to thrive under an open global trade system that allows individual nations to choose domestically suitable climate policies (Jakob, 2022).

Local governments' importance in decreasing emissions of carbon cannot be emphasized. Because they have power over a significant quantity of greenhouse gas emissions, they play a vital role in implementing climate improvements. Local governments are at the forefront of identifying indicators of change in current development paths or policy innovations to achieve the necessary changes towards carbon neutral economies. Insufficient cooperation or coordinated action at multiple levels or governance, election cycles and significant shifts of management, or an absence of legislative coherence throughout governance levels are all hurdles to transformational change (Dale et al., 2020). In the mid-2000s, the idea for significant complementarity between environmental protection and growth emerged in the green growth discourse, expanding economic perspectives on the environment. Examining worldwide climate policy reports reveals that economic theories have influenced greenhouse policies (Meckling & Allan, 2020).

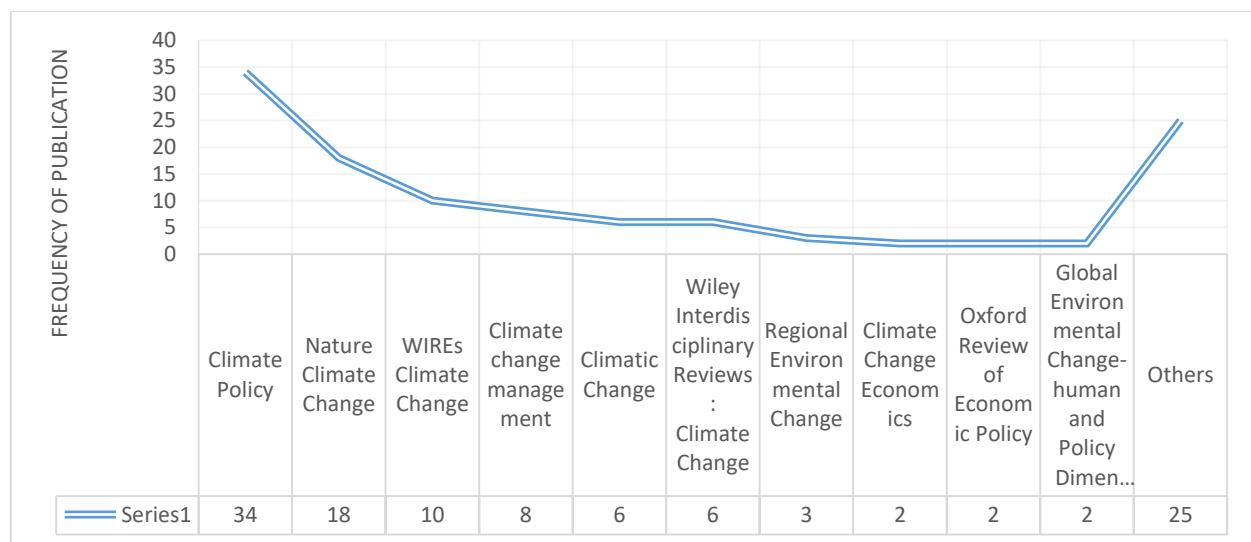


Figure 1. Frequency of studies published in journals around the globe from 2018-2022.

Climate change mitigation policies have risen in quantity and coverage during the last two decades, yet significant policy adoption gaps persist. Around fifty percent of these policy solutions are rarely used. Numerous policy adoption gaps remain, however, because each sector may extend the reach of a minimum one policy alternative. These deficiencies must be resolved in order to achieve the full mitigating potential of current policy solutions and facilitate the shift to worldwide net-zero emissions of greenhouse gases (Nascimento et al., 2021). Therefore, the goal of current comparative research is to determine the loopholes in global climate policy and Pakistan climate policy as well as propose future approaches for closing these gaps in order to make a national contribution to reducing global carbon emissions. Climate change responses are inextricably linked to political identity; hence, any efforts to advocate climate change solutions must take political identity into account. These findings emphasize the need of considering social identity considerations when discussing climate change mitigation solutions. The national policy cannot be enhanced until these social identity motivations are addressed and concerns in local settings are

acknowledged. Therefore, the current study focuses on gender and pollution in the local context, while also addressing climate change usage at the global and national levels.

1.2 Gender

Including additional key societal reasons associated with social, economic, including gender problems would undoubtedly be crucial to broadening the impact of the battle over global warming (Orsini et al., 2021). Since sociodemographic, psychological in nature and cultural characteristics such 'age, gender, rural/urban position, and income' were the most powerful determinants of public knowledge and actions regarding climate change (Wang & Zhou, 2020). Lau and colleagues (2021) investigate the other aspect of gender in climate change, stating that gender has a significant impact upon the perception of, and resistance to, climate change. Gender differences in mitigation and adaptation are essential to global climate change policy. However, progress is slowed by a number of impediments, including an ongoing set of gender presumptions: women are concerned about the environment, women constitute a homogenous that disadvantaged category, gender equality is a women's issue, that gender inequality is a numbers game.

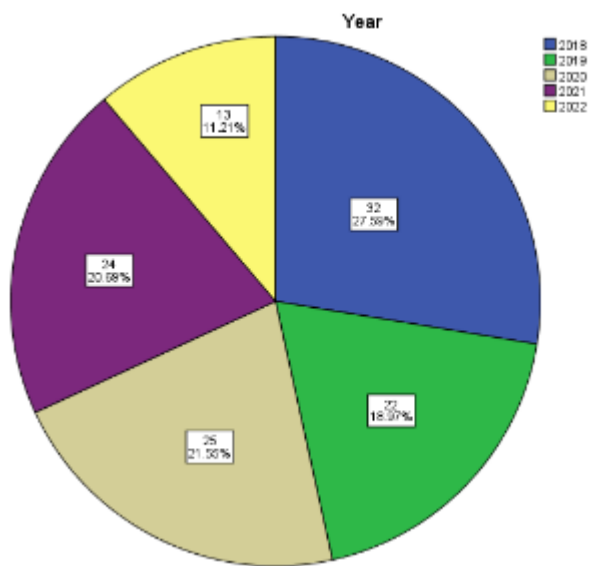


Figure. 2 Publications frequency on Climate Change from 2018-2022. The slight decline in publication is observed.

Gender does, however, play a role in climate risk and adaptation actions. In a consequence, climate change adaptation strategies have shifted toward 'mainstreaming' gender and prioritizing 'gender-responsive' approaches. It is unclear, however, to what degree this mainstreaming promotes or hides gendered concerns, and if contemporary climate policy reflects advancements within gender equality and climate change research. To be effective, gendered conceptualization needs to move beyond concentrating on differences between men and women and include interconnections like sex, caste, class, and resources (Singh et al., 2021). Therefore, the current study explores

different settings of gender in global and national contexts in order to find gender alignment in Pakistan's global and national climate change strategy.

1.3 Air Pollution

Air pollution caused by climate change is not a new occurrence. It is handled in a variety of economic, social, and political contexts across the world. It has a significant influence overall wellness, generating up to 7 million premature deaths per year, as well as a far greater amount for hospitalizations and sick days. Climate change may have an impact on the dispersion of primary pollutants, particularly particulate matter, as well as the formation of secondary pollutants such near-surface ozone (Orru et al., 2017). Air and water contamination, in addition to climate change, have captured the attention of the general population, is as has the problem of liberal democracy, demonstrated by the rise in far-right players in the European Union, the US, among elsewhere (Forchtner, 2019). A rising body of research shows that significant shifts in the earth's atmosphere and climate, notably anthropogenic global warming, impact the natural and the habitat of humans (D'amato et al., 2016). Because of the effects for people and the ecosystem, severe air pollution has attracted significant interest in recent years (Isaev et al., 2022).

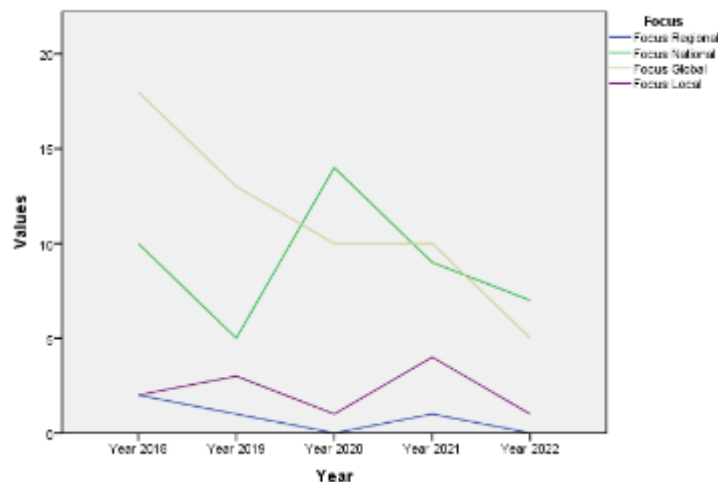


Figure 3. Territorial Focus of studies on Climate change from 2018-2022.

1.4 Smog

The London Fog, additionally referred to at the notorious Britain Haze of 1952, was a significant environmental incident that took place over a week-long time of air standstill and led to at least 10,000 additional deaths until the weekly death toll returned to normal (Bell et al., 2001). The Clean Air Act, or Act, of 1956 addressed the issue of smoke pollution (London-style smog) it established smoked-free zones to minimize the use of coal for heating, an important cause of pollutants in the UK's densely populated cities. Later Acts addressed industrial sources. Air quality in other European nations has slowly improved, but essential measures differ widely across the contemporary European Union. The European Commission is just starting to address the issue of

creating consistent standards for air quality throughout its member countries (Zhang & Samet 2015). Nonetheless, the industrialized world has conquered the harshness of pollution. However, haze has recently emerged as a single of the most important issues across numerous other countries. However, little attention has been placed on evaluating general awareness of air pollution, in addition to the links among public environmental awareness or smog avoidance. Smog has recently affected Pakistan. It is a visual air pollution mechanism that can cause a number of health problems (such as lung, respiratory, and skin ailments). Since 2013, smog pollution has been a major socioeconomic worry in Lahore, Pakistan's second-largest city, yet its state is getting worse each year (Raza et al., 2022). Therefore, while contrasting worldwide environmental plan with the country's national climate change policy, pollution is also highlighted in the current study.

1.5 Adaptive Management Model

Adaptation management is comprehensive and adaptable in terms of the specific goals of climate change policies and the tools used to achieve them. By definition, a strategy aims to execute a variety of policy answers to a problem. Therefore, it might be utilized for pursuing an array of legislative goals in mitigation (emissions reductions, farming practices, and forestry) as well as adaptation (accepting shifts in precipitation and temperature patterns, developing novel vegetation and safeguarding biodiversity, and creating seawalls to protect coastal areas from flooding). Similarly, the technique is malleable enough to allow policy interventions that have an indirect impact on climate; in fact, it is impossible to imagine a policy action that solely achieves goals related to climate change (Arvai et al., 2006). Adaptation and mitigation are both vital parts of an integrated response to the climate change problem. Climate 'problem structure' of adaptation, by the other hand, differs significantly from that of mitigation. For instance, adaptation may result in private advantages that are realized immediately, compared to benefits associated with the impacts of mitigation measures the world's climate that are seen over time. This discrepancy has an influence on public policy justifications for adaptation and creates barriers to incorporating mitigation and adaptation into climate policies (Metz & Hulme, 2013).

Technical, institutional, legal, pedagogical, and behavioral interventions are all part of the adaptation process. Research and data collecting are also adaptation strategies since they allow the implementation of effective climate risk reduction initiatives (Smit et al., 1991).

According to Enriquez-de-Salamanca (2017), the technological, social, and economic dimensions of climate change adaptation receive far more emphasis than the environmental dimension. The lack of interest in adaptation's environmental impacts can be attributed to (a) an overly sectoral approach with a predominance of non-environmental perspectives, (b) an increased interest in mitigation and direct climate change affects rather than adaptation impacts, (c) a propensity to view adaptation as inherently good, and (d) subjective/preconceived concepts on whether metrics are good or bad, without a comprehensive assessment.

Climate change integrated assessment models (IAMs) integrate dynamic representations for the energy-economy structure, the climate system, and the effects of climate change to aid in

the formulation of global, and maybe regional, climate policy. Originally designed for directing mitigation policy, some of them are now influencing adaptation policy in addition. The main reason for incorporating adaptation into global welfare-maximizing IAMs was to assess the sensitivity of mitigation goals to alternative assumptions about the amount and efficacy of adaptation. IAMs with regionally explicit impact models might provide helpful data for adaptation planning (Füssel, 2010).

The most common adaptation categories in Global Environment Facility initiatives are enabling and generally low-cost strategies such as capacity building, policy change, and planning and management. However, a diverse range of technological initiatives, from information and communications technology to early warning systems to new or enhanced infrastructure, have been recognized as common project objectives. Future revisions of the costs of various adaptation efforts, the combination of technological and managerial alternatives, and assessing the success of implemented actions will be critical in shaping the future global adaptation agenda (Biagini et al., 2014). As a result, the current study seeks to address the research question, to what extent is Pakistan's Government Climate Policy matched with Global Climate Policy in terms of mitigation (carbon emissions, air pollution, smog) and adaptation (gender)?

2. METHOD

Litmaps software is used to find publications about climate change policies from 2018 to 2022 throughout the world. There are 116 publications published in prestigious international journals (see appendix A). However, the majority of the publications are published in Climate Policy (34), Nature Climate Change (18), WIREs Climate Change (10), Climatic Change, and Wiley: Climate Change (6, 6), in that order. The majority of the papers were published in 2018 (32, 27.59%), 2019 (22, 18.97%), 2020 (25, 21.55%), 2021 (24, 20.69%), and 2022 (11.21%). In 2018, the majority of published articles had a global trend, which shifted to a national trend in 2020. Overall, climate change policy publications have been continuously falling. For comparative documentation analysis, 44 policy documents were downloaded on July 13, from UN Climate Change website <https://unfccc.int/> to Pakistan's climate change policy 2021. NVivo 11, was used for analysis. Word search techniques were applied to search out the words; carbon emission, gender, air pollution and smog. In the research search trees are presented to show the placement of searched words into different contexts in mentioned documents. In one figure, the technique of window print is applied where researchers couldn't find any search word.

3. RESULTS

developments	country	nations'	units	implementi	climatic	policy	support	globally	conferen
		internationally	stating	including	programm	changing	organized	technold	world
	sustained	economic	regions	action	general	report	level	small	agen
	social		assembly	cooperativ					

Figure. 4 Global focused on climate change

Figure 4 depicts that the global climate change policy primarily focused on economic development, and insisted on globally sustained climate programs, their implementation and actions. The policy also depicts change, which includes social support on an organized level that helps to assemble all of these steps on a global level through technology, conferences, and climate change agents.

climate	pakistan	water	ensure	managem	adaptatio	carbon	promote	country
		measures	areas	developme	forest	sector	capacity	resource
change	policy	national	energy	governme	develop	mitigatio	natural	take
					emissions	agricultu	susta	impad

Figure. 5 Pakistani focused on climate change

Figure 5 shows that Pakistan's climate change strategy is largely focused on shortage of water and energy, with the goal of ensuring development management through adaptation of government policy to grow forests for carbon emission. The policy focuses on the promotion of agriculture and the preservation of natural resources in order to reduce carbon emissions. It focuses on taking efforts to mitigate the effects of climate change.

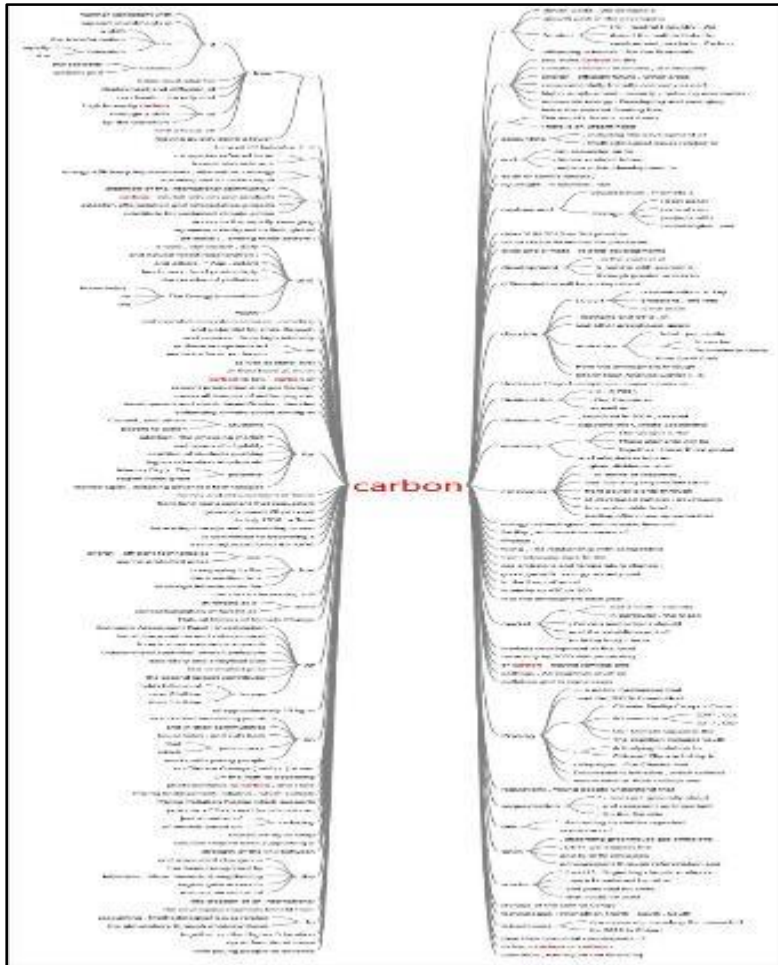


Figure. 6 Global focused on carbon emission

Figure 6 indicates the key contexts of carbon in global climate policy as emission, economy, dividends, energy technology, finance, markets, pricing, regulations, sequestrations, sinks, and stocks.

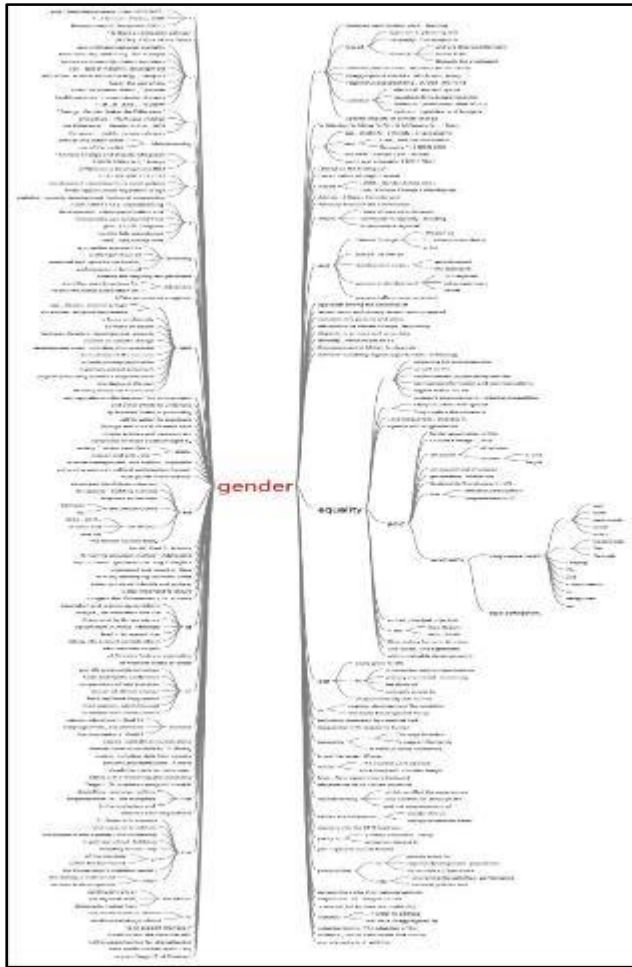


Figure. 8 Global focused on gender in climate change

Figure 8 displays the key background of gender in global climate policy as equality and empowerment for women or equal participation. Other significant sub-contexts include balanced involvement, differentiated impacts, gaps, inequities, and violence.

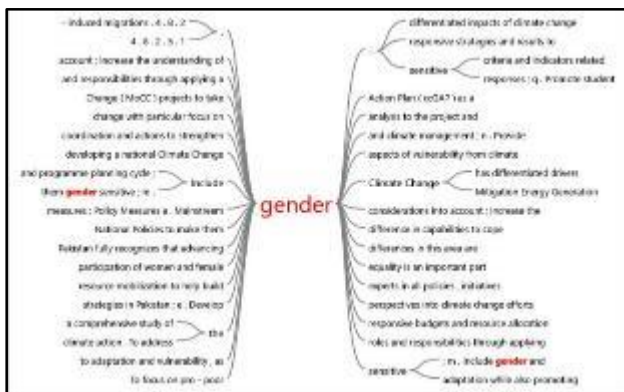


Figure. 9 Pakistan’s focused on gender in climate change

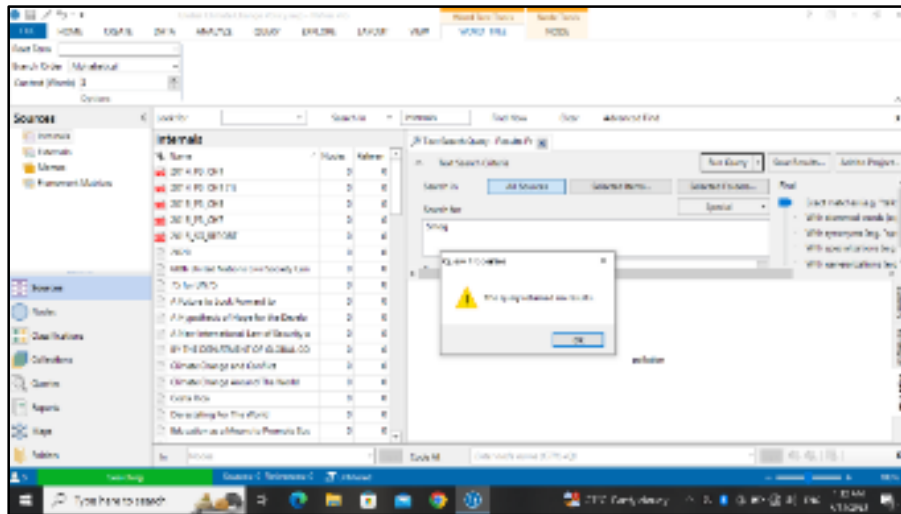


Figure. 12 Global focused on Smog in climate change

Figure 12 displays that Smog, the major issue of Pakistan in the winter season is not the priority of global climate policy.

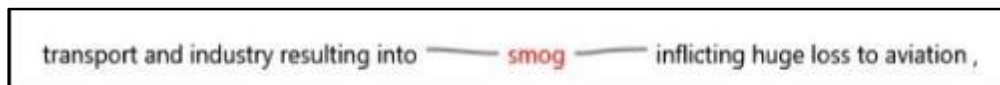


Figure. 13 Pakistan's focused on Smog in climate change

Figure 13 displays that Smog is very much linked to huge loss of aviation but there is no context of health of human beings in Pakistan.

4. DISCUSSION

The current study's findings show that global climate change policy has been predominantly centered on economic growth, with an emphasis on internationally maintained climate programs, their execution, and activities. The strategy also represents change, which involves organized social support that aids in the assembly of all of these phases on a worldwide scale through technology, conferences, and climate change agents (figure 4). Pakistan's climate change plan, on the other hand, is mostly focused on water and energy scarcity, with the objective of assuring development management through adaptation of government policy to expand trees for carbon emissions. In order to minimize carbon emissions, the strategy promotes agriculture and the preservation of natural resources. It focuses on mitigating the consequences of climate change (figure 5). Emissions, economy, dividends, energy technologies, finance, markets, price, regulations, sequestrations, sinks, and stocks are the important contexts of carbon in global climate policy (figure 6). In Pakistan's climate policy, the important contexts of carbon are also portrayed as emission, economy, markets, pricing, partnership, sequestrations, sinks, and stocks. It illustrates that Pakistan's low-carbon emissions goal is very much in line with global climate policy (figure 7). Thus, the current study's inferences support the findings of Arvai and colleagues (2006) and give grounds for aligning mitigation levels to global climate change policy. Gender equality and

empowerment for women, as well as equitable participation, are fundamental to global climate policy. Other important sub-contexts include balanced participation, diverse impacts, gaps, disparities, and violence (figure 8). In Pakistan, the key context of gender in climate policy is as differential drivers, mitigation energy generation, variations, equity, responsive budgeting, and sensitive adaptation. It illustrates that Pakistan's gender climate change strategy is somewhat aligned with global climate policy (figure 9). As a result, the current study's results back up the findings of Smit et al. (1991), Metz & Hulme (2013), and Enriquez-de-Salamanca (2017), and provide justification for matching adaptation levels with global climate change policy.

Carbon emissions, greenhouse gases (GHG), overexploitation of green houses, resource depletion, rising temperatures, and mortality are the primary polluting conditions in global climate policy. Other contexts are mentioned, such as building effective collaborations and using cleaner fuel (figure 10). In Pakistan's climate policy, the primary settings of pollution are garbage disposal, wetlands, and threatened water flows. It reveals that Pakistan's pollution strategy does not accord with global climate policy (figure 11). Smog, Pakistan's biggest winter concern, is not a priority for global climate policy (figure 12). Surprisingly, pollution is strongly connected to massive aviation losses, but there is little context for human health in Pakistan (figure 13).

5. CONCLUSION

Although, Pakistan has implemented adoptive management model on mitigation and adaptation of global climate policy but there are some inconsistencies. Pakistan's climate change policy on gender is little bit align with global climate policy. But on issue of pollution is not aligned. But on low carbon emissions is very much in line with global climate policy. Smog, the major issue of Pakistan in the winter season is not the priority of global climate policy. As a result, Pakistan should make efforts to include smog in the world's list of climate change issues in order to fix it.

Recommendations

Pakistan should take proactive steps to raise awareness and advocate for the inclusion of smog as a critical issue in global climate change policies. This can be done through international forums, collaborations and negotiations. Although Pakistan's climate change policy touches on gender issues, there is need for deeper integration of gender considerations. The policy should include specific provisions and actions to ensure that women are not only protected from adverse impacts of climate change but are also empowered to participate in and benefit from climate adaption and mitigation efforts. Pakistan need to enhance its national climate change policy to more comprehensively address air pollution.

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