



RESEARCH PAPER

Environmental Governance: An Overview on Governing Environment in Pakistan

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ABSTRACT

A qualitative study that focuses on exploring the reign of environmental governance in Pakistan in relation to global environmental governance. It also explores the barriers involved in successful formulation, execution and implementation of environmental policy instruments in Pakistan. A plethora of wicked environmental challenges exist many of which pose serious threat to our economy. Even though a multitude of federal and provincial environmental departments, regulations and policies exist yet there is a setback in controlling disasters and/or alleviating situations. Why is it so? To explore data was collected through structured interviews. A pilot interview was conducted to ascertain the validity. Small sample size is a limitation of this study. Interviews analysis revealed weak political commitment, resource deficiencies, dearth of research-based policy making and response centric approaches as prime reasons for poor environmental governance. The study suggests need for strict regulatory and collaborative governance, communities' involvement, vulnerability assessments and proactive approaches.

KEYWORDS Environmental Degradation, Collaborative and Regulatory Governance, Reforms

Introduction

Environmental degradation has been profoundly recognized as a pressing issue with the continuous development of global economy (Chang, Dong & Liu, 2019). Ever since the industrial revolution took place the demand of raw materials has increased at a great pace that has not only depleted earth of its natural resources but also deprived of its natural capacity and capability of recycling and restoring back nutrients (Chang, Dong & Liu, 2019). Resultantly, climatic changes due to elevated temperatures, alterations in weather patterns, depleting natural resources, increasing pollution, escalating urbanization, biodiversity loss and deforestation are some of the devastating environmental phenomena encountered globally as a consequence to economic developments post industrialization (Kahouli, Miled & Aloui, 2022). World Bank suggests there could be annual losses of \$2.7 trillion to global economy by 2030 due to environmental issues and among the hardest hit countries the predominant ones would be Democratic Republic of Congo, Angola, Madagascar, Ethiopia, Bangladesh and Pakistan (WB, 2022).

Evans (2012) in his book "Environmental Governance" had expressed the notion that long before it was thought environmental issues such as climate change can be dealt technically or scientifically but growing tragic incidences had revealed technical or scientific paradoxes alone are not sufficient rather political, social and economic

interventions are needed. Escalating global environmental issues and the resultant economic and health complexities emerged due to failed governance. Therefore, some sound governance mechanism is required for effective environmental management to ensure sustainable economic growth and development (Bennett & Satterfield, 2018). In this context, environmental governance is considered to be an impetus in steering relations between political actors, societal stakeholders, businesses, institutions and environment (Evans, 2012).

Literature Review

Environmental Governance

Hyden (1997) and Muzaffar, et. al., (2023) had defined governance as those measures that involve setting rules to exercise power and settling down conflicts. Kjaer (2023) expresses in her book "Governance" that in Public Policy and Administration, governance does not confine to state actors or institutions rather it focuses on the role of networks in the pursuit of common goals. Further she illustrates these networks include politicians, bureaucrats, representatives of civil society, public sector employees and civilians.

Oakerson (1992) proposes environmental governance comprises of processes through which societies formulate decisions related to the environment. Lemos and Agrawal (2006) define environmental governance as a regulatory mechanism consisting of processes, mechanisms, procedures and organizations through which state actors formulate and implement action plans to resolve environmental problems. According to Zaheer (2019) Environmental governance is a pivotal instrument to sustainable development through knowledge acquisition, sound decision making procedure and rules implementation according to national and international environmental standards.

Environmental Governance -Reforms/Generations

According to Chang, Dong and Liu (2019), if we trace back the path of environmental governance one can notice three main eras in its history of development.

- Centralized Regulatory Mechanism "Command-and-control"
- Market-Oriented Economic Approach "Environmental-economic means"
- Hybrid partnerships-state and other actors

Command-and-Control Approach

First generation of environmental governance is believed to run from somewhere 1960s till the end of 1970s. Here policy creation was the mandate of political authorities whereby the legislation was enacted to bring about behavioral change through enforcing environmental laws and regulations (Elazegui, 2002). The national governments were in command of designing, formulating and implementing environmental laws and regulations according to certain standards (Chang, Dong & Liu, 2019). According to the authors principle here is to command through enactment of legislations and control by imposing fines or penalties over violators. Globally, many countries have formulated legislations in this era to protect environment.

The challenge with the command-and-control approach was lack of flexibility from government and bulk cost behind the implementation process. Consequently, many corporations had made alliances against the government with the proposition that

government alone is not sufficient to curb the problem therefore in mid to late 1980s the governance pattern altered and the market economic system was adopted where economic measures of market were incorporated into governance mechanism for environmental protection. This marks the second generation of environmental governance and the approach was termed as “environmental-economic means” discussed below.

Environmental-Economic Means

Under this pattern government had applied pollution charges and marketable permits as policy instrument tools. Pollution charges is the sum of tax levied upon enterprises for emitting the quantity of pollution, however; profitable firms installing pollution treatable technologies not only minimize or evade taxes but also enjoys a goodwill among industrial and government sector (Chang, Dong & Liu, 2019). In other environmental literature, the environmental tax system is referred as “green taxes” or “eco taxes”. Such tax system was common in European countries; Canada, Denmark, France, Greece, Hungary, Italy, Japan, Mexico, Netherlands, Norway, USA, Spain, Sweden and Germany etc.

A second approach was emission trading or marketable permits (Chang, Dong & Liu, 2019). Under such policy instrument the local or national government sets a permissible quantity of pollution as determined against certain national or international standard. Then a number of permits allowing quantity of pollution are sold out to firms. These permits remain of shrinkable nature and profit earning firms are supposed to reduce emissions the succeeding year. Such industrial enterprises were considered free to sell out the unused or remaining permissible quantity (excess permit) to the needed firms. Thus, it also helps in achieving the goal of total emission control. US, Denmark, UK, Sweden and Norway have used this market-based tool for controlling pollution (Driesen, 2006).

Hybrid Structure

With the advancements in the field of governance and management and with plethora of information seeping in from other technical and academic disciplines it dawned on practitioners and scholars that government alone is not the sole authority for decision making and not all decisions of government have proved to be fruitful in conserving nature and environment (Armitage, de Loe & Plummer, 2012). Therefore, in the 1990s environmental governance gradually entered in its third era of reforms. Relationship networks and hybrid partnerships among state and non-state actors were taken into consideration (Armitage et al., 2012). Bache and Flinders (2004) proposed multilevel governance is required for environmental governance as nonstate actors play a crucial role in the decision-making process. Thus, the main theme of hybrid partnership of environmental governance is the obvious feature of third generation emphasizing the involvement of various stakeholders at societal, economical, technological and political levels due to rising complexities of environmental problems (Bulkeley & Mol, 2003).

Environmental Development in Pakistan

Legislative Movement - National Environmental Governance

In Pakistan the legislative movement on environment began with the establishment of Ministry of Environment in 1975 in response to follow-up to Stockholm Declaration of 1972. Under the Ministry’s patronage the first consolidated environmental

law “Pakistan Environmental Protection Ordinance (PEPO) 1983” was proposed. Subsequently, Pakistan Environmental Protection Council was formed as supreme environmental policy making body and Environmental Protection Agency was founded at the Federal level followed by four environmental protection agencies at the provincial level. National Environmental Quality Standards (NEQS) were formulated in 1993. Finally, in 1997 the Pakistan Environmental Protection Act (PEPA) replaced PEPO and many other environmental laws and standards were developed. Post 18th amendment the subject of environment became more of a responsibility of provinces rather federal therefore; all provinces enacted their own laws with amendments in Federal Act (Malik, et. al., 2023)

Devolution of Power - Local Environmental Governance

The subject of environment has never garnered a central position in Pakistan as the country remained surrounded by strategic, financial and security challenges since birth (Khayam & Ahmad, 2020). Post 18th amendment with the devolution of powers to provinces the subject of environment was further exacerbated (Zaheer, 2019). The consequences of which are clearly manifested by disaster damages and losses of earthquake 2005 and recent 2022 flood disaster. As per Pakistan Floods 2022 Post-Disaster Needs Assessment Report issued by Ministry of Planning, Development and Special Initiatives the total estimated damage stood around at PKR 3.2 Trillion (US \$ 14.9 billion). Moreover, Pakistan has been ranked at 176th position among total of 180 countries in Environmental Performance Index 2020 and 2022 ((EPI), 2022) and most ghastly it stands at 180th position on air quality. Additionally, Pakistan ranks as the eight most vulnerable country on the Climate Risk Index 2021 (Muzaffar, Fern, & Yaseen, 2024; Germanwatch, 2021).

With the existence of whole apparatus of policies, rules, laws and ordinances as well as various environmental institutions at federal and provincial level we still had failed to lessen the impact of scaled disasters. Therefore, the prime lesson that one could infer from the disasters occurrence in Pakistan is the presence of gaps and challenges at provincial and federal level which is discussed in the following section:

Challenges faced in Pakistan while Integrating Environmental Governance

According to Khayam and Ahmad (2020), weak administration, little commitment, judicial, financial and capacity flaws as well as issues of collaboration and coordination are the prime reasons of failing environmental governance. The challenges in effectively executing environmental policies include but not limited to resource deficiencies, institutional capacity and communication and coordination among relevant stakeholders. Additionally, the focus on economic development overshadows environmental matters in decision making and effective implementation (Khan, 2016).

Globally Adopted Successful Mechanisms of Environmental Governance

Denmark - Industrial Economy

Denmark is a top exporter in Europe as well as around the globe. Being a top exporter and highly industrial economy, it is assumed to be the largest emitter of CO₂. However, surprisingly with reference to its work and progress on environment as per EPI Index report of 2022 Denmark secured number one rank out of 180 countries with 77.90 points on different measuring parameters.

Government of Denmark through achieving high ranking in EPI has set an example for other countries. Additionally, it has passed Danish Climate Law in 2014 with the following objectives and targets to be achieved within the recommended deadlines;

- a) 70% reduction in green greenhouse gasses emission by 2030 compared to 1990 (base year). In this context, an agreement to reduce 50-54% emissions by 2025 was promulgated as on May 2021 with Land Use, Land Use Change Forestry
- b) It also mandates to setting a new environmental target every five years
- c) Pesticide-free farming

Climate Programs and status projections to be ensured by reporting their current strategies to the Parliament. Thus, the above steps made them achieve the highest rank in the list.

China - China is also struggling to maintain its environment for which it entered into Paris Agreement on climate and pledged to become carbon neutral by 2060. According to Xu (2023) to achieve carbon neutrality by 2060 Chinese government is placing strong emphasis on governance tools and mechanisms as it is coupling government strategies with advanced information technologies. Chinese government is applying big data technology into environmental governance programs. Environmental big data comprises of land resources, ecological data, climatic, socio-economic data and disaster monitoring that helps to generate accurate environmental information for Chinese policy makers thus enabling them to better comprehend problems and formulate effective environmental protection policies leading to sustainable economic development (Tomislav, 2018).

Russia, Norway and Finland - Pasvik-Inari Trilateral Park project for the conservation of natural resources is an example of transnational environmental governance involving international organizations, national governments, regional actors and indigenous population. Trilateral Park involves natural areas from Russia, Norway and Finland (Vladimirova, 2023). The area is famous for its unique natural flora and fauna and the European, Eastern and Arctic species meet here. The area is a significant breeding and resting place for migratory birds. According to researchers since Middle Ages Finns, Norwegians and Russians have also settled down here and each clan is distinctive from each other based on their traditional culture and ethnicity. So, the coexistence of different ethnicities marks the uniqueness of this area. The international cooperation between different national and transnational stakeholders includes nature monitoring, environmental knowledge and promotion of nature-based tourism (Vladimirova, 2023).

Material and Methods

Present study is qualitative in nature aiming to explore environmental governance in Pakistan. Research information presented in this document is based on primary and secondary resources. Study participants include government, private officials and academicians. An interview guide containing consent letter and a set of standard questions was prepared. A pilot interview was conducted to determine the viability of questions. A total of 4x semi-structured interviews were conducted. Research ethical standards were maintained during all interviews. Among secondary resources journal and newspaper articles, information from guest lectures conducted at Institute of

Administrative Sciences, government and international organization websites, and Pdf reports are utilized.

Results and Discussion

Global Environmental Issues

With the onset of industrialization and increase in anthropogenic activities the natural cycle of environment has affected resultantly we see a plethora of environmental issues hovering globally and haunting all living species. The deadliest global environmental issue is "Climate Change" which gave rise to global warming phenomenon in early 1990s and recently matured into a phenomenon "global boiling". Other global environmental issues include: air, water, soil/land pollution, pesticides, waste and water management, loss of biodiversity, glacier melting, floods, urbanization and deforestation.

Global Actions to Mitigate Environmental Changes

In context to environmental issues the important question arises here is the efforts taking place globally to mitigate the effects of environmental change in order to protect from further deterioration. Responses gathered from all 4x interviewers i.e., Assistant Registrar at a Private University (Respondent 1 (R1)), Deputy Director Program at a Consultant Firm (Respondent 2 (R2)), Regional Director at Pakistan Meteorological Department (Respondent (R3)) and a PhD Scholar (Respondent 4 (R4)) are stated below:

- Developed and developing countries became signatories of renowned **Paris Treaty** pledging to reduce green-house gas emissions
- Many countries are raising awareness among citizens to behave responsibly towards environment and are inculcating the culture of reduce, renew, recycle and reuse (4Rs). Here, R3 mentioned a story of his friend about civic sense which is quoted below:

"One of his friends was in Holland when either him or his son threw a chocolate wrapper on the street. An old lady above 50 yrs. of age was watching them from her building window. She came down and without saying a single word to them quietly picked up the wrapper and threw it in dustbin and left for her apartment. The friend became so embarrassed and from that day onwards he never repeated that behavior. If you see in Pakistan everyone is engaged in throwing litter on roads, spitting out and spreading trash around."

- Globally, governments are implementing environmental laws strictly and ensuring their strong enforcement among all citizens for example Singapore as R3 quoted

"See Singapore how Govt. is managing city. You will not find litter or spitting on roads except some tree leaves that human cannot control. Cigarette zones are separate. Very strict law implementation exists and strong fines are imposed on violators. Such nations are not very much civilized or more sophisticated than us but it's all about command and control".

R1 and R3 mentioned the following initiative taken worldwide as a response to environmental challenges;

- City designing is based on environmentally friendly concept for example roads have tracks for bicycle riders or exclusive lanes for pedestrians such as in Netherlands
- Denmark has strong environmental policies due to which they have reduced CO₂ emissions by 70%

R1 quoted examples of Sweden that has CO₂ tax policy, Switzerland has strong recycling programs and Japan being vulnerable to earth quakes has effective disaster risk reduction and mitigation policies.

Local Environmental Issues

Pakistan unlike the developed countries does not have an industrial economy; however, urbanization, increasing population, using traditional and outdated methods, technology and old ways of farming comprising of pesticides and crop burning has resulted in several environmental issues.

R1 while answering about environmental issues quoted that;

“Baluchistan is Pakistan’s biggest province in terms of area but its major area is under-utilized due to scarcity of water...if we manage flood water through diverting it to Baluchistan, we may be able to generate revenue”

The respondent further added due to heavy rainfall, glacier melting and land sliding our tourism industry has affected. While talking about issues in Pakistan R4 mentioned that;

“Due to Environmental degradation an estimated 365 billion of our economy was affected in year 2012 due to the lack of inadequate water supply sanitation and hygiene, and our soil is getting affected by excessive use of pesticides and for that we have to move towards organic farming.

The statistic expressed above is presented in Pakistan Economic Survey 2013-2014 report.

The responses received collectively acquiesced that one of reason behind this is climate change as a repercussion of which we have faced incidents like Flood of 2022 and heavy snowfall.

Impact on Pakistan’s Economy

The recent report released by World Bank Group’s Country Climate and Development Report (CCDR) for Pakistan concluded that flooding 2022 had costed more than 30 billion dollars in damages and economic losses including infrastructure, crops, assets and livestock (WB, 2022).

Environmental Initiatives – Pakistan

R4 shared a number of initiatives that have been taken in the recent past like **Green Pakistan Program**, **Wild Life Act**, **Clean & Green Pakistan**, **Billion Tree Tsunami** and **specie conservation in Indus water** were included.

Role of Capital Institutions

In context to capital institutions, we have National Disaster Management Authority (NDMA) when asked about its role in disaster management and preparedness different respondents answer differently and their responses are summarized below:

R1 - NDMA is trying to fulfill its role as per the available resources yet they are lacking to play effectively when a large-scale disaster occurs.

R2 - In respondent's own words

"Role of NDMA is reactive and not proactive. It comes into an action at the time of disaster. Certain serious gaps exist regarding disaster preparedness, secondly it has to work in coordination with provincial and local govt. and local govt. structure is also missing. Then there are coordination, communication and institutional challenges as well as there are missing state structures such as administrative authorities at local level. No local govt. No public participation or preparedness for disaster. So, certain policy and execution gaps exist here....."

Gull (2022) in his article "A Flawed Approach" published in Dawn has given the same narrative, as expressed above, of response-centric approach of government to managing disasters. Such after disaster approaches lead to humanitarian crisis causing excessive losses to human life, infrastructure, agricultural produce, livestock and economy of a country.

Local Environmental Governance Barriers

Administrative

In terms of administrative respondents expressed there is weak communication and collaboration among different departments. Also, weak execution and implementation of laws exist. Then, at some places one will find budgetary constraints affecting resource allocation and work execution. Human capability in terms of environment exclusive education, ability to plan, formulate and implement risk assessment and reduction models, mitigation strategies is limited. Therefore, lack of subject matter expertise undermines an organizations performance. In terms of technology R2 said as quoted below:

"I have evaluated two projects; Green Pakistan Program - Punjab C the GIS Chapter and Sustainable land Program phase II (funded by UNDP & GEF) the GIS database quality was not only poor but adverse due to which the performance becomes poor."

Lack of Political Will

Along with these gaps one of the respondents coupled the answer with lack of political will and desire to change the environmental situation of the country. But this is high time that political bodies and administrators must pay heed to problems emerging due to environmental degradation as the phenomenon has already entered in an alarming paradigm.

Weak Management

R3 shared the devastating water situation of the country that we are rich in water but due to poorly managed storage facilities we are dumping a large quantity into oceans. The resource mentioned this as”

“Yearly we waste huge amount of water due to limited water storage resources. 100 million Acre Feet (MAF) water is available in Pakistan 80 MAF of it comes from monsoon. We can store only 13 MAF as this is our storage capacity roughly then 20 to 25 Acre feet goes to crops so rest goes into oceans thus underutilized. So, water management is a big issue and all responsible govt. organizations must see through this.”

Dr. Ahmed Gull a guest speaker on Climate Change invited during one of the sessions at Institute of Administrative Sciences highlighted similar reasons behind environmental failures in Pakistan: lack of political will, perceived budgeting conflict, dependence on foreign aid and the legacy of “response-oriented approach”.

The researched literature also supports above mentioned barriers highlighted by respondents and guest speaker.

Corrective Actions – Basing Policies on Models of Successful Countries

As per study participants there is a need to bring reforms in our environmental governance mechanisms for which respondents suggested that policies are required to be implemented in true spirit. There has to be **political stability and strong will** to bring reforms. R1 and R4 suggested one person cannot individually bring about the change rather government has to **push down the policies strongly through ensuring effective execution and implementation** via reward and punishment system. Also, R2 expressed there may be a need to alter **policy instruments** through an integrated approach involving academia and practitioners engaging them to devise workable strategies coupled with researches and practical experiences. Additionally, all this is not possible without the aid of **technology** as this era has transitioned from digital to big cloud data therefore; newer aspects of technology must be incorporated to yield maximum benefits. Furthermore, efforts cannot be turned fruitful without full **cooperation of stakeholders** and according to all respondents every individual of society is a stakeholder as how beautifully R3 has quoted the same as below:

“Every individual has to play a role. Whenever planning proposals are formulated it is important that citizens should make aware of them. Having said so our education system could play a centric role in raising awareness. A child’s learning is everyone’s learning. Children changes mind of their parents as well elderly like grandpa and grandma. In this way the chain of change would continue. Therefore, children are important stakeholders too in environmental awareness and planning issues. If we talk about institutions/govt. organizations there has to be environmental campaigns, drills and informatory sessions held on regular basis to bring behavioral changes. Such teachings will replicate to families, societies and cities. Even a housemaid is a stakeholder who should be taught not to dump garbage into streets or in front of someone else’s house.”

Lastly, internationally there are countries that have made achievements through bringing reforms in their environmental governance systems via incorporating bigger to small changes. Denmark, Sweden, Switzerland and Japan had implemented environmental policies reducing CO₂ and other greenhouse gas emissions. Cities are

designed such that roads are friendly for bicycle riders and walkers. Netherlands is a culture of bicycles as soon as child is turned 12, he is gifted a bicycle. Carpooling is common in many countries. Singapore has strict regulatory control over spreading litter on streets and roads.

Role of Non-State Stakeholders

Non-Profitable organizations or non-governmental organizations are playing role as advocates whereas their role is, primarily, dependent upon the interest and willingness of donors and the owners.

The citizens behavior towards the protection of their environment are not tailored in a way where they show concerns about their surroundings. There is an exigent need to work on providing awareness to citizens on how important it is to protect surroundings to have a sustainable environment.

Conclusion

Environmental governance is integral to developing healthier environment as well as it helps in improving projection and execution of development plans. The qualitative study was aimed to explore the reign of environmental governance in Pakistan in relation to global environmental governance. Pakistan being a developing country has various environmental legislations in place but weak regulatory and collaborative governance compromises the situation and many a times economic development, simply, overshadows environmental concerns. The disastrous environmental legacy of Pakistan points to the urgent need of reviewing, strengthening and implementing strong action plan to protect society and community from irreparable and irreversible damages and losses as encountered by past and recent floods. The analysis of literature and interviews showed effective environmental governance is highly needed in order to achieve sustainability. The existing gaps include poor commitment, coordination and weak political will. The study provides recommendations; however, there are limitations to it as well. Firstly, the sample size was minimal and opinions drawn here may be different to what other environment practitioners and educationists contemplate. Secondly, the time constraint restricted the study to a few sectors and Punjab province only.

Recommendations

Few recommendations as a way forward for bringing improvements in environmental governance area are as follows:

- **Proactive Approach:** Government has to be proactive in its approach and must take initiatives to protect/secure communities from becoming victims of a large-scale disaster.

Gull (2022) in his article "A Flawed Approach" is of the view that the flood damages and losses encountered by nation manifests government's serious lack of planning and preparedness. Mostly, these floods are attributed to "act of God", "unprecedented rains", "global warming" and so on by our leaders but these narratives exhibit government's response centric approach to disaster management. Henceforth, the action plan involves rendering rescue, relief and rehabilitation rather beforehand disaster preparedness, risk assessment and prevention strategies.

- **Execution of Legislation:** Government officials have to execute and implement legislations in true spirit. No relaxation should be rendered to any business entity or political interferences and/or influences shall be condemned. Strong reward and punishment system should be in place and be practiced.
- **Collaboration among Academia & Practitioners:** Academia and industry practitioners need to collaborate for designing effective policy instruments driven out of scientific research and on ground experiences. Policy implications should be reviewed and evaluated regularly and any adjustments shall be carried out as per the needs assessment.
- **Involvement of Local Communities:** Apart from government's leading role local communities to come forth and play a proactive role in safeguarding environment. In this context, imparting environmental education to children at schools is a crucial step.
- **Evidence-based research policy making:** It is a hallmark to successful policy execution and implementation. Thus, results should not be eliminated out while formulating policies and researched policies should constantly be researched upon for improvements and better effectiveness.
- **Vulnerability assessment:** There is a need to have vulnerability assessment at institutional level to have fair knowledge of their own situation. This will help them to overcome their weak areas. As one of the guest Dr. Gull (2023) during his lecture at Institute of Administrative Sciences mentioned that every institute is responsible to conduct its own vulnerability assessment to ascertain its position for emergencies. Additionally, institutions are responsible to prepare themselves to face disasters or any possible emergencies through conducting drills, emergency preparedness and handling trainings.
- **Accountability Mechanism:** Lastly, there has to be effective mechanisms of accountability in place so public and external funds utilization shall be disclosed appropriately through transparent means. These mechanisms are important to safeguard and improve the performance of public sector organizations to render effective services to citizens of a country (Schillemans, 2015).

References

- Armitage, D., De Loë, R., & Plummer, R. (2012). Environmental governance and its implications for conservation practice. *Conservation letters*, 5(4), 245-255.
- Bache, I., and Flinders, M. (2004). Multi-level governance and the study of the British state. *Public Policy and Administration*. 19(1), 31-51.
- Bennett, N. J., & Satterfield, T. (2018). Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters*, 11(6).
- Borrini-Feyerabend, G. (2002). *Indigenous and local communities and protected areas: rethinking the relationship*. World Commission on Protected on Protected Areas.
- Bulkeley, H., and Mol, A. P. (2003). Participation and environmental governance: Consensus, ambivalence and debate. *Environmental Values*. 12(2), 143-154.
- Chang, C. P., Dong, M., & Liu, J. (2019). Environmental governance and environmental performance. ADBI Working Papers 936, Asian Development Bank Institute. Available: <https://www.adb.org/publications/environmental-governance-and-environmental>
- Committee, B. R. (2023, 7 16). *Bangladesh Rural Action Committee*. Bangladesh Rural Action Committee
- Coria, J., & Sterner, T. (2010). Tradable permits in developing countries: Evidence from air pollution in Chile. *The Journal of Environment & Development*, 19(2), 145-170.
- Danish Ministry of Climate, E. &. (2023, Aug 24). *Danish Ministry of Climate, Energy & Utilities*. Retrieved from Danish Ministry of Climate, Energy & Utilities : <https://ens.dk/en/our-responsibilities/energy-climate-politics/danish-climate-policies>
- Dash, B., & Akhter, M. S. (2023). Mainstreaming disaster risk reduction (DRR)-Climate change adaptation (CCA) and governance: Srikakulam, Andhra Pradesh, India. *International Journal of Disaster Risk Reduction*, 86, 103560.
- Driesen, D. (2006). Economic instruments for sustainable development. *Environmental law for sustainability*, 19, 277-308.
- Economy, E. (2014). Environmental Governance in China: State Control to Crisis Management. *Management. Daedalus*, 184-197.
- Elazegui, D. D. (2002). *A "law of nature": The command-and-control approach*. Madison, WI: SANREM CRSP SEA.
- E. P. (2022). *Environmental Performance Index (EPI)*. EPI.
- Evans, J. P. (2012). *Environmental governance*. Routledge.
- Global Climate Risk Index. (2021, January 25). Germanwatch
- Gul, A. A. (2022, September 17). A flawed approach. *Dawn*

- Hyden, G. (1997). Civil society, social capital, and development: Dissection of a complex discourse. *Studies in comparative international development*, 32, 3-30.
- Huang, Y. (2020). *Toxic Politics*. Cambridge University Press.
- Kahouli, B., Miled, K., & Aloui, Z. (2022). Do energy consumption, urbanization, and industrialization play a role in environmental degradation in the case of Saudi Arabia?. *Energy Strategy Reviews*, 40, 100814.
- Khayam, M. U., & Ahmad, I. (2020). Decentralization of environment in Pakistan: issues in governance. *Policy Perspectives*, 17(2), 101-116.
- Kjaer, A. M. (2023). *Governance*. John Wiley & Sons.
- Lemos, M. C., & Agrawal, A. (2006). Environmental governance. *Annu. Rev. Environ. Resour.*, 31, 297-325.
- Malik, A., Yaseen, Z., & Muzaffar, M. (2023). Governance in Pakistan: A Case Study of Pakistan Muslim League-N, *Journal of Politics and International Studies*, 9(2), 35-49
- Muzaffar, M., Fern, Y. S., & Yaseen, Z. (2024). Good Governance and Citizen's Trust in Pakistan: A Moderation Effect of Unethical Behavior, *Asian Journal of Human Services*, 26, 91-108
- Muzaffar, M., Fern, Y. S., & Yaseen, Z. (2023). Governance Dilemma: A Way Forward For Third World States, *Journal of Research Administration* 5(2), 9792-9803
- Oakerson, R. J. (1992). Analyzing the commons: a framework.
- Schillemans. (2015). Calibrating Public Sector Accountability: Translating experimental findings to public sector accountability. *Public Management Review*, 1400-1420.
- Statista. (2021). *Distribution of carbon dioxide emissions worldwide in 2021*. <https://www.statista.com>
- Tomislav, K. (2018). The concept of sustainable development: From its beginning to the contemporary issues. *Zagreb International Review of Economics & Business*, 21(1), 67-94.
- The World Bank (2022). *Pakistan Urgently Needs Significant Investments in Climate Resilience to Secure its Economy and Reduce Poverty*. The World Bank
- Vladimirova, V. (2023). Regional environmental governance of protected natural territories in the European North: Russia, Finland, and Norway, and the case of Pasvik-Inari Trilateral Park. *Climatic Change*, 176(7), 85.
- Wisman, P. (n.d.). *EPA History (1970-1985)*. EPA US Environmental Protection Agency.
- World Bank: *Economy faces huge losses if we fail to protect nature*. (2022). World Economic
- W. M. (2023). *July 2023 confirmed as hottest month on record*. World Meteorological Organization (WMO).

Xu, K. (2023). Challenges, Opportunities and Future Paths: Environmental Governance of Big Data Initiatives in China. *Sustainability*, 15(13), 9975.

Zaheer, F. (2019). Legislation and the Practices of Environmental Governance for Sustainable Development in Pakistan: A Post 18th Amendment Assessment. *Journal of Political Studies*, 26(2), 97-110.