

CLIMATE FINANCE: CHALLENGES,  
OPPORTUNITIES, AND WAY FORWARD FOR  
PAKISTAN



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**CERTIFICATE**

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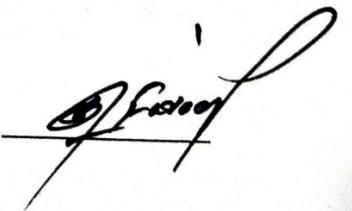
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## **Dedication**

I dedicate this thesis to my beloved parents who always have been my support system.

I dedicate this thesis to the hard work and sacrifices they have made for me to reach this stage of my life.

## ACKNOWLEDGEMENTS

All praises to **Almighty Allah (SWT)** who is the most merciful of all. All the respects to our **Holy Prophet Muhammad (peace be upon him)** whose blessings enabled to me overcome all the difficulties in the path of this research.

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**Zahid Majeed**

## ABSTRACT

This study assesses Pakistan's potential and options for climate finance. Climate change and associated emergent risk are threatening the very existence of modern civilization with all its magnanimous advances. Countries like Pakistan having higher vulnerability to changing climate are at most risk. Worryingly, these countries have lowest capacity to fight climate change. One of the biggest barrier is the lack of fiscal space to finance claimant action. So is the case for Pakistan, ranked as the 5<sup>th</sup> most vulnerable country to climate change in 2020 by GCRI (Abubakar, 2020).

A deeper understanding of challenges and options for raising climate finance is of critical importance. The literature on climate finance for Pakistan is scant. To the best, it is limited to accounting total foreign flows of climate finance. The issues like climate sensitive fiscal planning and role of banking sector in expanding climate finance remain ignored.

This study undertakes the assessment of landscape of climate finance and to identify the challenges in this regard. Finally, it ascertains some possible options that Pakistan can explore to enhance and expand climate finance. Particular focus will be on i) climate finance sensitive fiscal planning, ii) green banking and capital market as catalyst of private sector as major player in raising climate finance. Overall, this study explores policy options to generate climate finance at national and international level. The analysis, using desk review, exploratory analysis of secondary data and perception survey administered on 100 respondents, shows that:

- i) Annual required cost for climate actions especially for adaptation measures is between \$7 - \$14 billion in Pakistan<sup>1</sup>
- ii) Owing to (chronic) lower fiscal space and competing development choices, Pakistan has very limited capacity to finance climate action from domestic resources
- iii) Despite a high reliance on external finance, Pakistan has not been able to attract any sizable external finance from multilateral banks, bilateral arrangements or multiple climate finance initiatives such as green environment fund, green environment facility fund and green climate fund

Pakistan needs to work on multiple fronts to generate required climate finance. Role of private sector will be key in generating domestic finance. Debt swaps can be helpful to

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<sup>1</sup> <https://www.greenclimate.fund/sites/default/files/document/pakistan-country-programme.pdf>

a large extent. Tapping global green market as well as bilateral climate agreements could be the best options to raise external finance. Civil society pressure is the efficient way to enhance climate informed fiscal planning in Pakistan. The SBP has stronger role to play, and it has potential.

In a situation analysis on Pakistan's capacity to finance the climate action from domestic resources is limited. The reliance on external finance is high. But Pakistan has been unable to attract external finance. Domestically, private sector has critical role to play. Most efficient way to generate finance from international resources may include tapping global green energy market and from bilateral agreements.

Keywords: Climate change, Climate finance, Global green energy market

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## LIST OF ABBREVIATIONS

GCRI	Global Climate Risk Index
SBP	State Bank of Pakistan
GCF	Green Climate Fund
GEF	Green Environmental Facility
UNEP	United Nation Environment Pogramme
GHG	Greenhouse Gases
CPI	Climate Policy Initiative
UNDP	United Nations Development Programme
GDP	Gross Domestic Product
REDD	Reducing Emission from Deforestation and Forest Degradation
FCPF	Forest Carbon Partnership Facility
ADBI	Asian Development Bank Institute
UNFCCC	United Nation Framework Conference on Climate Change
LDCF	Least Development Countries Fund
AF	Adaptation Fund
IPCC	Intergovernmental Panel on Climate Change
ETS	Emissions Trading System
IMF	International Monetary Fund
DFES	Debt for Economic Swap
ADB	Asian Development Bank
WBG	World Bank Group
NEP	National Environmental Policy
NCCP	National Climate Change Policy
INDC	Intended Nationally Determined Contributions
EPA	Environmental Protection Agency
CCC	Climate Change Committee
EBRD	European Bank for Reconstruction and Development
CIF	Climate Investment Fund
MDB	Multilateral Development Bank
WAPDA	Water and Power Development Authority
IFC	International Finance Corporation
WB	World Bank
NDC	National Determined Contributions
SSRN	Social Science Research Network
OECD	Organization for Economic Co-operation and Development

# Chapter 1

## Introduction

Environmental sustainability means the responsible interaction between human beings and nature to avoid depletion and degradation of natural resources and allow for long term sustainability and quality. Carbon is the building block of life on earth, like water cycle there is carbon cycle existing naturally on earth (between flora, fauna and oceans) which is known to keep the carbon in balance for thousands of years.

But with time especially after industrial revolution, the climate condition is consistently dropping due to the rising greenhouse gasses emissions (GHGs) which are increasing aggressively in the atmosphere ultimately causing cost to life on earth in the form of global warming and climate change etc. According to (UNEP, 2020), in 2019, the GHG emissions were reached around 59.1 GtCO<sub>2</sub>e which is an alarming situation for all the environmental organizations in the world. These rising emissions not only badly affecting the climate conditions but also creating other socio-economic issues.

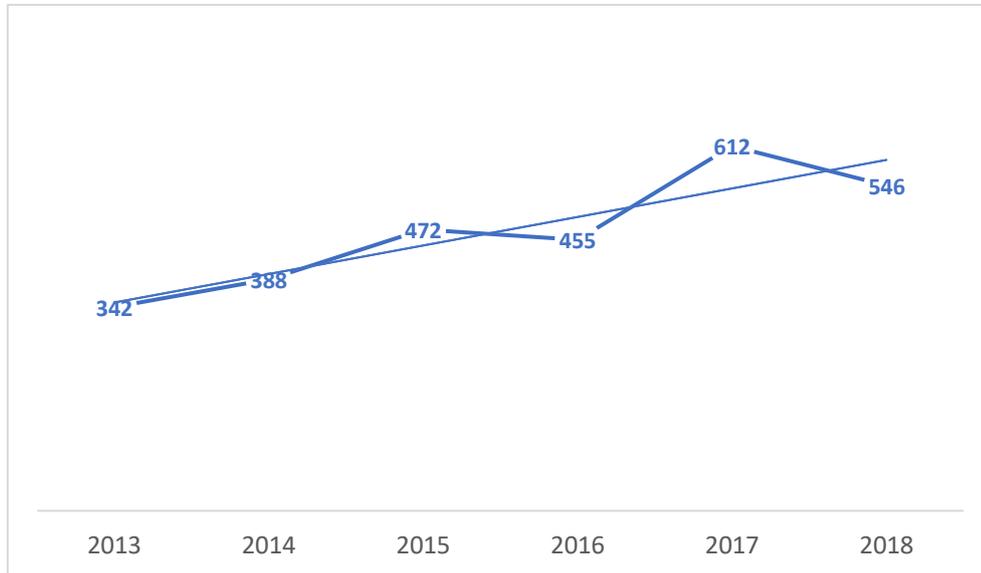
Developing and least developing countries (LDCs) are more vulnerable to impact of climate change with limited financial resources. And thus, the current global agenda is to develop a program to tackle the climatic issues in the emerging economies as they are witnessing the worse scenario. Similarly, there is also a huge adaptation gap in developing countries.

According to CPI 2019, the adaptation finance in emerging economies remains only 5% during 2017-18. Same as (Puig, et al., 2016) stated that, around \$140-300 billion per annum funding is required to developing nations for adaptation measures and around \$280-500 billion is required till 2050. Similarly, annually around 1.1 trillion is required for low carbon transitions especially for developing countries (Oxfam, 2014).

Further, there is no concept of localization in decision making about climate finance. Around \$93.7 billion will be needed in year 2020 to least developing countries to implement their nationally determined contributions (NDCs). Only 18% of global climate finance reaches to least

developing and developing countries and less than 10% finance from dedicated climate funds gets to the local level, where climate action is required (Soanes 2020).

Due to budget constraint, it is not possible for developing economies to finance climate action in their countries. And thus, financing from different international resources is required. Over the time it has been observed that the flow of climate finance at global level has increased from \$342 bn in 2013 to \$546 bn in 2018 as shown in fig 1.



**Figure 1 : Climate finance flow across the globe (USD Bn)**

Data Source: CPI Report 2019

Like other developing countries Pakistan also badly affected by climate change. Although, carbon emissions in Pakistan remains very low around 0.8% of total global emissions (Iqbal & Khan, 2018) but yet Pakistan is at higher risk due to climate change. Pakistan is contributing roughly 0.34% of the total greenhouse gases which are responsible for global warming. However, the GCRI ranked Pakistan as the 5<sup>th</sup> most vulnerable country to climate change in 2020 (Abubakar, 2020). During last 50 years, on average annual temperature in Pakistan rises by roughly around 0.5° C. It is evident that Pakistan bore an economic loss of around \$3.8 billion in just 20 years from 1998-2018 due to climate change and experienced 152 worse climate conditions (UNDP, 2020).

As a growing economy, Pakistan is already struggling to compete its socio-economic issues and additional burden of climate change can make it more complex as an abundant funding is required to address all these issues. Pakistan is also aiming to increase its industrial as well as transportation activities in its Vision 2025 which ultimately increases the GHG emissions to 1046 tons by 2030 and 4621 tons by 2050.

The annual economic cost for Pakistan remains around 1.5% - 3% for adaptation and around 5.5% of GDP for mitigation. The annual required cost for climate actions especially for adaptation measures is between \$7 - \$14 billion in Pakistan.<sup>2</sup> However, the government is currently unable to generate this huge sum at national level and thus the international climate funding is required. Furthermore, Pakistan has also submitted its Nationally Determined Contribution (NDCs) in Paris Agreement 2015 with an aim to reduce GHG emissions up to 20% by 2030 through utilizing international grants of roughly \$40 billion.

This seems unachievable as the flow of climate finance to Pakistan has been much lower than expected. According to Pakistan Economic Survey (2020), Pakistan has received a grant of \$3.8 million from World Bank since 2015 for reduced emission from deforestation and Forest Degradation (REDD+). In 2018, Forest Carbon Partnership Facility (FCPF) provided an additional grant of \$4.01 million to further support the preparedness activities in Pakistan till June 2020. Now the question arises where from we can get these funds and how we can generate finance from our domestic resources.

This study attempts to focus on the available options to attract climate finance from different sources especially in emerging economies in order to tackle the climate issues. In the times of the millennium, finance has expanded and reshaped tremendously. The financial markets around the globe underwent refinement and results are sophisticated financial instruments, products and financing models. Supported by fourth technological revolution, rapid financialization and integration of markets occurred that brought together the public and private actors to deliver sustainable development outcomes.

### **1.1 Significance of the study**

Fifth in the list of most vulnerable countries, Pakistan has the least climate finance provision to control or manage the outcomes of climate change. Need and necessity-based, the country needs to receive average annual international grants worth \$7 billion to \$14 billion. The flows however have almost never crossed half a billion per year. According to Global Climate Policy initiative in 2014, Pakistan's received only under half a billion dollars.

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<sup>2</sup> <https://www.greenclimate.fund/sites/default/files/document/pakistan-country-programme.pdf>

In this context, a deeper understanding of challenges and options for raising climate finance is of critical importance. The literature on climate finance for Pakistan is scant. To the best, it is limited to accounting total foreign flows of climate finance. The issues like climate sensitive fiscal planning and role of banking sector in expanding climate finance remain ignored.

Thus, this study aims to undertake the assessment of landscape of climate finance and to identify the challenges in this regard. Finally, it plans to ascertain some possible options that Pakistan can explore to enhance and expand climate finance. Particular focus will be on i) climate finance sensitive fiscal planning, ii) green banking and capital market as catalyst of private sector as major player in raising climate finance.

## **1.2. Objectives**

Financing the climate action, including mitigation and adaptation measures require large amounts of financing. Developing countries, like Pakistan, have very limited resources. Public sector has low fiscal space while private sector has lower incentives which keep them away to invest in climate actions. Meeting the demand for financing the climate therefore requires a deeper understanding of challenges, opportunities, and way forward. A particular focus is required to assess the financial market and product development to finance climate action. Against this backdrop, the study aims to:

- i. Undertake a situation analysis of climate finance landscape in Pakistan
- ii. Assess annual budget at federal and provincial level to gauge the element of “climate sensitive fiscal planning”.
- iii. Identify major challenges facing the Pakistan and opportunities to finance the climate action with key focus on i) capital market ii) green banking and climate sensitive fiscal planning.
- iv. Outline some policy option to improve the climate finance landscape with particular focus on i) financial market and climate sensitive fiscal planning
- v. To provide feasibility analysis of top three policy options emerging from the analysis (based on expert opinion)
  - a. Political feasibility
  - b. Administrative feasibility

- c. Technical feasibility
- d. Equity impact
- e. Environmental impact

### **1.3. Research questions**

This study attempts to provide answer to the following questions:

- i) What is the current state of climate finance in Pakistan?
- ii) Are there any avenues available to raise climate finance from domestic resources?
- iii) What is the most efficient way to raise climate finance from international community?
- iv) How can Pakistan improve the role of private sector in climate finance through green banking and other financial market incentives?
  - a How well developed is Pakistan's capital market to design and offer products/bonds which can attract local and international finance?
  - b What potential State Bank of Pakistan (SBP) has to help raise the climate finance?
- v) To what extent current fiscal planning of Pakistan can be called "Climate Informed Fiscal Planning" and how it can be improved?
- vi) What are the most feasible policy options that Pakistan can adopt to improve climate finance?

## Chapter 2

### Literature Review

Climate change and related emergent like poverty and environmental degradation are threatening the existence of the world. Least developing and poorest societies are most affected by climate change. Climate finance is the key resource to help them out. Now the question arises how much and from where the finance is to come for the battle against climate change? For that we have to reestablish and strengthen our policies to get this required finance from external sources but more importantly we have to utilize our local resources.

To understand and draw a brief analysis of the financing of climate in Pakistan. it is very important to have an insight or to do a detailed background study that how federal and provincial government finances to resolve all the underlying issues related to the climate's finances in Pakistan. it is necessary to study in detail about the financing of climate change by keeping in consideration the past research done on this topic. This chapter of literature review gives a detail review that how the climate finances impact the development in Pakistan.

The literature review serves as an assessment to compare the previous studies with the present studies in context of the outcomes it gives for the betterment of finances the climate actions in Pakistan, where the issue of finances the climate is getting increased with the passage of time. so, to efficiently resolve and makes the financing of climate in Pakistan better, it is necessary to have a detailed study of the status of economic situation and to identify that what are those challenges which causes hindrance in the finances of climate.

It is noted that the Climate finances unit of Pakistan is responsible for a better financing of climate change actions on a large frame network. The Climate finances unit of Pakistan with the collaboration of provincial and federal government along with the participation of united nation agencies work for the smooth and efficient finances of climate actions in Pakistan. As nowadays the issue of finances the climate actions become a global problem (Chaudhury et al.,2016).

In most of the climate related decisions, there is no localization; international and national organizations implement directly without systematic engagement with local

organizations and vulnerable people over the distribution and use of climate finance directed to an area. Between 2003 and 2016, less than 10% of climate finance from global climate funds. But it is not the issue of quantity; the quality of climate finance can also be improved. Systematic engagement of local actors in this regard will tackle the crisis more affectively, efficiently, sustainably and accountably (Soanes 2020).

Previous studies related to finances of climate actions in Pakistan shows that as a developing country Pakistan formulates a meta organization policy which works on a one actor in order to finances the climate actions such as mostly the stakeholders of Pakistan opt the strategy of climate change adaptation in order to serve best towards the process of finances. The previous studies shows that the meta organization policy formulate by the stakeholders of Pakistan lacks its implementation on the national level which makes the issue of finances the climate actions complicated (Chaudhury et al.,2016).

Pakistan is among one of those countries which are badly affected by the issue of climate change so, it is necessary for a developing country like Pakistan to have a proper financing system for mitigating the increases issues of climate change. As The past studies shows that those country which has a well-defined and proper financial and economic resource towards the betterment of environment and climate are successful to combat the issue of climate change. it is a need to have a proper financing and investments for the adaptation and mitigation of climate actions in Pakistan (Mallick,2014).

The issue of climate change causes a serious threat to the economy of the Pakistan as the financing of climate actions needs a huge amount which would be not easy for a developing country such as Pakistan to tackle this issue. Several studies shows that the socioeconomic loss of Pakistan which was due to the climate change needs approximately 7 billion to 14 billion dollars annually. To tackle this kind of finances issues of climate change the government formulates different strategies and management policies to combat the adverse issue of climate change such as the government introduced the Eco system restoration policy to brings the environmental resilience.

This initiative of ecological mitigation and adaptation mainstreaming includes the afforestation, biodiversity conservation. The main aim of this kind of initiative is to

build an independent financial mechanism in Pakistan to finance the climate actions. There are also some kind of ecosystem restoration funds which are issued by ministry of climate change to mitigate the finances of climate (Sur&Zhang,2006).

To facilitate the fiscal policy regarding to climate change the government sector took an initiative with the collaboration with the private sector to increase the fiscal space which helps in finances of climate at national level. Meeting the demand for financing climate action, therefore, requires a well-designed evidence-based strategy backed by a deep understanding of challenges and available options in this regard. As it is obvious that Climate change is among one the biggest challenges faced by modern day world (Ahmed et al.,2011).

Developing countries such as Pakistan face a dilemma, on one hand, in relation to climate change as they are the most vulnerable to the impact of climate change due to certain characteristic, such as large dependence on agriculture for livelihoods and employment and a low capacity to adapt with the rapid increase in the climate change, on the other, they have competing priorities and limited resources.

Several past studies shows that the global community has started some initiatives, such as Global Climate Fund to help developing countries raise climate finance. The broader objective of these initiatives is to provide funds to developing countries to mitigate or adapt various climatic impacts Such as under the Paris Agreement, the global community resolved that “developed countries must contribute funds - \$100 billion a year committed from 2020 - with the aim of increasing fund mobilization after 2025”.

Same as according to Copenhagen and Green Climate Fund it is necessary to provide more than \$100 billion for mitigation of and adaptation to climate change. According to a recent report in 2018 climate financing by world’s largest multilateral development banks in developing countries rose to \$43 billion, which was 22 percent more than the previous year Pakistan is among the most vulnerable country which has the least climate finance provision to control or manage the outcomes of climate change.

As in Pakistan the issues, such as poverty eradication take over long-term investments in climate change. It has been estimated from the past studies that Pakistan has a very low domestic capacity to finance climate change related investments, as Pakistan depends upon funds from outside world to fight climate change. The Paris Agreement aims to reduce up to 20 percent of its 2030 projected GHG emissions. The Pakistan

intends to do this mainly using international grants of approximately \$40 billion. This seems unachievable as the flow of climate finance to Pakistan has been much lower than expected (Ahmed et al.,2011).

According to Pakistan Economic Survey (2020), Pakistan has received a grant of \$3.8 million since 2015 for reduced emission from deforestation and Forest Degradation through a competitive process by Forest Carbon Partnership Facility of the World Bank, Pakistan secured some funding to prepare documents for the four elements required to complete the readiness phase. Meanwhile, in 2018, Forest Carbon Partnership Facility of the World Bank provided an additional grant of \$4.01 million to further support the preparedness activities in Pakistan until June 2020.

Another survey study of the past shows that the Global Environment Facility had provided Pakistan \$234.42 million in total financing and \$626.68 million in co-financing by June 2019. This includes financing of projects at national as well as regional/global level. As per the estimation of Global Forest carbon it gives a total funding to Pakistan is \$121 million as of August 2020, increasing from \$89 million in April 2019(Dollar et al.,2005).

Climate change will push up to 132 million people into extreme poverty by 2030 according to World Bank. We have to negotiate with this issue on emergency bases and we have to engage local people in decision making about climate finance. “When you look at transformative climate adaptation outcomes, they have landed to be the ones they have had more localization. There’s more local engagement, more local leadership and defining what interventions will make the biggest difference” said by Clare Shakya (2020).

There is a need of proper use of climate finance to reduce the impact of potential risks of climate change at local and national level. According to UNDP national climate fund have several distinct functions such as collecting funds and disbursing them to meet the climate change objectives and engage different financing sources including public, private, bilateral and multilateral (UNDP 2011).

Policies like green banking already adopted by developed countries should be established. From last few decades policy of green banking gained momentum in both developing and developed countries, surely there may be some structural difference,

like in developed countries private sectors are the main contributor in financing to climate, in Japan more than 70% finance comes through private sectors but in developing countries private sectors has lack of interest and lower incentives. Green banking also known as sustainable banking focusing on establishing framework for environmentally and socially sustainable lending, in which mainly focused on providing loans for green capacity building and issuing of green bonds (ADBI, 2020).

Steckel et.al (2015) review the challenges encountered in project-based approaches of allocating climate finance in the past. In contrast to project-based finance, they find many advantages to spending climate finance in support of price-based national policies. First, the support for international climate cooperation is improved when efforts of successively rising domestic carbon pricing levels are compensated.

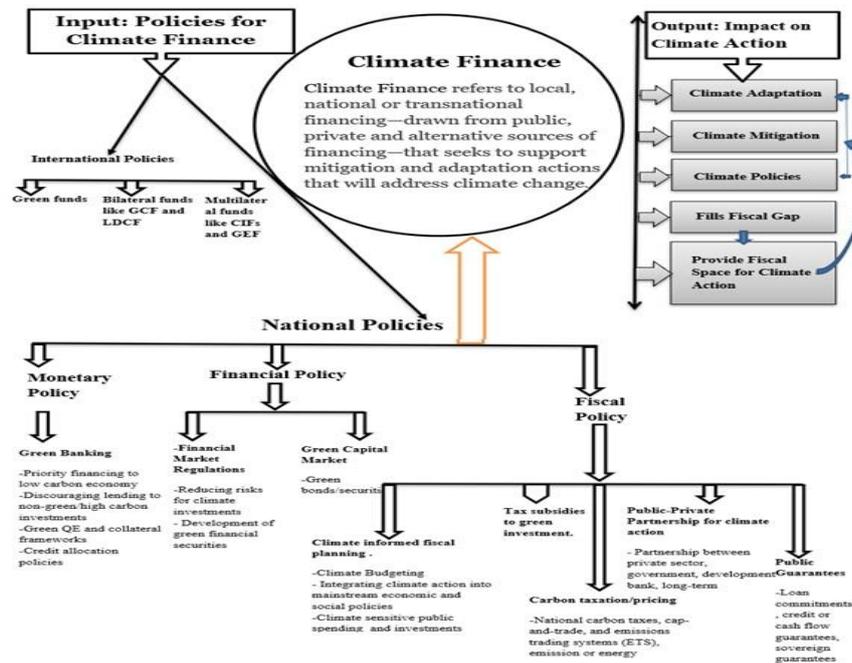
Second, carbon pricing sets incentives for least-cost mitigation. Third, investing domestic revenues from emission pricing schemes could advance a country's individual development goals and ensure the recipient's „ownership“ of climate policies. They conclude that by reconciling the global goal of cost-efficient mitigation with national policy priorities, climate finance for carbon pricing could become a central pillar of sustainable development and promote international cooperation to achieve the climate targets laid down in the Paris Agreement.

## Chapter 3

### Conceptual Framework and Methodology

#### 3.1. Conceptual Framework

The conceptual framework is usually designed to create a pathway to achieve aims and objectives of a particular study. As the main focus of this study is on lack of financial resources to combat with climate related actions. Being an emerging economy, Pakistan does not have separate funds to spend on climate protection. To achieve the 2° C target under 2015 Paris agreement, there is an abundant need of climate policies at both national as well as international level especially when participation of developing countries almost negligible in decision making about climate. Now the question rises that how can Pakistan enhance and can expand the existing climate findings? The fig 2 below is showing required policies framework at both national and global level through which developing nations like Pakistan can enhance their climate spending.



**Figure 2: Climate financing Policies at national and international level**

##### 3.1.1. International policies

As the domestic climate policies are the most feasible and having important role in the transition of low carbon economy. But it is really difficult for emerging economies to generate separate funding for climate actions due to lack of financial resources. And thus, the international support could be useful in this regard by providing technical

assistance, technological cooperation and fund transfers through different mutual funds set by UNFCCC.

Under principle of common but differentiated responsibilities, all countries required to pursue climate policies and the developed countries to pay incremental costs to developing countries. According to (Ha, Hale, & Ogden, 2015), it is estimated that around \$40 - \$175 billion in terms of climate finance flows from emerged to emerging economies including fundings from both public and private entities.

In this regard green funds, bilateral funds i.e., Green Climate Fund (GCF), least developed countries fund (LDCF) and multilateral funds i.e., Green Environmental Facility (GEF), adaptation fund (AF) are the main drivers of transferring funds from emerged to emerging economies. Finances received from these countries is used in sustainable agriculture, forest projects, water resource management and most part of these funding used in clean energy projects.

Similarly, an appropriate investment is required to shift economy containing low-carbon and to ensure the climate change resilience under global target of 2°C. Numerous studies i.e., IPCC (2014), international Energy Agency (2014) and New Climate Economy (2014) are available for estimating the required investment especially in developing nation. It is difficult to develop the baseline scenario for comparison with 2°C.

The high uncertainties about the economic growth in the market which are depends on economic activities, policy, technology costs etc. According to Spencer, T, (2015), in the coming decades, the estimated required investment should be calculated according to the magnitude and qualitative nature of hurdles about the climate financing as needs of quantitative investments.

From this scenario, various qualitative results coming out from different studies. It is observed that the incremental investment of the baseline scenario are several times smaller than the required total investment. The total investment shift is to decrease in investment from high carbon activities and to rise investment in low carbon activities. Simply the world needs to shift the investments from high carbon activities towards low carbon activities and there should also increase in overall investment rates for getting more fruitful results.

To analyze the required quantity for incremental investment, the rate of investment

between economies and within economies should be consider over the time. During the period between 1990 to 2013, the share of global investment in terms of GDP were fluctuated by more than 3% point. The shared rate of investment as of GDP can be differ by 10% points between the countries relatively having similar level of GDP per capita.

Even a fluctuation of 3% points observe over the past two decade are more than the incremental investment as of GDP would require to adapt and mitigate climate change (Weikmans, R. and Roberts, J.T., 2019). In term of quantitative, the increasing incremental investment are more manageable, and a larger share will help to increase the low carbon investments for productive investment.

### **3.1.2. National level policies**

The national policy of any country is the most efficient and quick response towards any issue. Cash transfers under such policies could be a quick response. Pakistan has also designed many climate related policies but yet fails to implement all these policies. At domestic level, both monetary and fiscal policies are required to combat climate degradation.

#### **3.1.2.1. Monetary policy**

Green banking also known as sustainable banking focusing on establishing framework for environmentally and socially sustainable lending which mainly focuses on providing loans for green capacity building and issuing of green bonds. The global green bond market has green to roughly \$200 billion in 2019, from nothing five years ago. Most of the Asian and pacific banks and regulatory authorities are ready to finance against climate for sustainable development.

In 2020, ADBI conducted a survey of 18 banks from Asia and Pacific region in which 16 out of 18 banks agreed that the low carbon pricing should be the focused area in the Asian region (Durrani, et al., 2020). The importance of green banking immense for banks, economy and for environment by avoiding the risks of banking sectors including credit risks, legal risks and environmental risks as discussed below,

The credit risks mainly arises indirectly when banks are giving loans to customer whose firm has adversely affected by the cost of cleaning pollution. The cost of meeting new regulations and law on emission level may be efficient to put someone's company out of business. Similarly, banks like other firms and industries are also at

risk if they themselves do not comply with relevant environmental law and regulations. Ultimately if banking sector do not comply with environmental regulations, then they lead to environmental degradation which is long lasting and dangerous for all kind of living creatures.

### **3.1.2.2. Fiscal policy**

The environmental liabilities are the fiscal liabilities of tomorrow. Government intervention can play important role in sustainability of environment by implementing effective climate policies of finance production and its effective distribution as well. Transparent and authentic government institution required to measure, monitor and evaluate the finance generated by national and international resources.

Around 93% of total inflow of climate finances from international resources used in mitigation activities due to its higher potential to raise fiscal revenue and there is lack of adaptation policies by the government which ultimately leads towards fiscal outlays. The finances with both adaptation and mitigation benefits increased to 2.1% of total inflows and thus government needs to shift towards adaptation policies.

This paper will also examine and review existing advanced tools which can be introduced by government to expand fiscal stimulus. In particular, the focus will be on climate informed fiscal planning which requires an effective national response in climate informed decision-making based on reliable, sustainable and timely information about climate change. Proper channels of coordination and communication from local to provincial, provincial to national and national to international level which could be efficient in reducing emissions and, thereby, mitigating the impacts of climate change.

Similarly, the focus will be also on public-private partnership in climate action. For example, transitioning towards low-carbon economy in the current scenario requires huge investment and innovation. Private sector can play important role in financing of climate action development and public sector will need to better engage with private sector to mobilize resources and innovation. A major challenge for private sector engagement on environment is the lack of evidence regarding to environmental outcomes. Public sector can leverage private investment in climate action by providing good incentives and trust on investors. Table 1 below is showing possible options for fiscal policy to raise climate finance.

**Table 1: Efficient fiscal policies for rising climate financing**

<b>Climate informed fiscal planning</b>	<b>Tax subsidies to green investment</b>	<b>Carbon taxation/pricing</b>	<b>Public-Private Partnership for climate action</b>	<b>Public Guarantees</b>
<b>Climate Budgeting</b>	Financial support for the uptake of green technology such as reduce of capital cost, provision of public capital	National carbon taxes, cap-and-trade, and emissions trading systems (ETS), emission or energy	Partnership between private sector, government, development bank, long-term	Loan commitments, credit or cash flow guarantees, sovereign guarantees
<b>Integrating climate action into mainstream economic and social policies</b>	This will increase societies resilience to future risks related to climate change	Implementing fiscal disincentives to discourage use of polluting technologies	By providing financing, technological assistance and market advice to each other	
<b>Climate sensitive public spending and investments</b>	Public investment in green infrastructure e.g. sanitation, energy and public transport	Carbon pricing will be key tool for green recovery	Private investment can be main tool for transition toward low-carbon economy	

### **3.2. Output; impact of implementing effective policies**

The climate financing can work as a bridge between the sustainable development goals and development. As it is clear that financial availability is the main key point for development there for if finance is use such was which led to progressive purposes

and restoration of environment by minimizing the rapidly increasing climate change. All these adaptations are necessary for the fulfillment of gap between development and progress of green environment.

- **Climate adaptation**

Generated finance can be used in 1) establishment of climate adaptation framework, 2) advanced tool in national disaster and risk management authority, 3) planning and development authority and 4) in making of new institution for monitoring and evaluation of environmental projects.

- **Climate mitigation**

Finance generated by mitigation policies like emission tax, emission performance standard, and fossil power tax will be helpful in renewable resource subsidy, R&D subsidy and other environmentally friendly projects.

by effective implementation of policies proposed in this study we can generate enough finance at national level which can be useful in.

- Making of further feasible Climate policies
- Fills fiscal gaps

Providing fiscal space for climate action, collectively we can call it sustainable investment.

### **3.3. Data description and methodology of analysis**

. This study is based on mixed methods both qualitative and quantitative. The data is derived from secondary sources including different databases, economic survey of Pakistan, federal and provincial budgets (different years) and publicly available studies which highlights the climate condition and climate financing in Pakistan from both domestic as well as international resources.

Primary data was collected through an online questionnaire, filled by the experts and relevant stakeholders from different organizations including public sector, private sector and academia. Given the technical nature of the topic, the survey was administered on individual having relevant experience on environmental issues and climate financing.

The reason for using primary data is that the availability of secondary data in context

of Pakistan is missing. The questionnaire was designed on Google Form services, and the questionnaire link was sent through email. Follow up calls were made to ensure the participation of the participants. More than 100 participants from different organizations submitted their response. And all the analysis were made on survey's results by using exploratory data analysis and world cloud technique.

- **Research Design**

There were mainly five components of my research methodology,

- 1.Desk Review**

-Global and national literature to identify best practices to leverage climate finance (priority focus on peer countries)

- 2. Content analysis** (last five years, before Covid-19, federal and provincial budget documents. the document analysis is derived from by analyzing federal and provincial budgets for the last five years while relevant report and newspapers articles is consulted to substantiate the arguments and findings for situational analysis

- 3. Quantitative analysis** (primary data collection through PERCEPTION SURVEY)

-Structured questionnaire administered on experts related to climate finance, such as SBP, Ministry of Finance, Ministry of Climate Change Academia, Civil Society Organizations, Development partners)

- 4. Qualitative analysis**

In-depth Interviews, Focus Group Discussion to validate findings from analysis and for feasibility analysis

- 5. Synthesis of findings (to reach to efficient conclusions)**

- **Data**

Data was collected through structured questionnaire administered on experts from related field, mainly have two parts:

- i). The first part includes detailed questions related to:

- a) Field of expertise,

- b) Experience/relevance/interest in the sector,
  - c) Current position
- ii). The second part was included questions on:
- f) Climate finance in Pakistan,
  - g) Annual budget of federal and provincial level to compensate people living in climate sensitive areas and to overcome the of climate change,
  - h) What are the major challenges facing the Pakistan to finance the climate action and how we can overcome these challenges?
  - i) Development of Pakistan's capital market,
  - j) Role of State Bank of Pakistan and commercial banks,
  - k) Climate informed fiscal policy.

- **Methodology        data  
analysis:**

- 1) Word cloud technique used to undertake content analysis
- 2) Exploratory Data Analysis (EDA) used to analyze perception survey data
- 3) Trend analysis (secondary data) for assessing,
  - Climate flows to Pakistan
  - Budgetary allocations for climate related expenditures
  - Green credit such as share of credit for green energy

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<sup>1</sup> Particular focus was on policy reports pertaining climate finance in developing countries and Pakistan

## Chapter 4

### Climate Finance Readiness in Pakistan: Secondary Data Analysis

Climate change remains the prior issue of Pakistan. Yet Pakistan is contributing a minimal share in total global emissions but still Pakistan is at greater risk. As the country has low fiscal space and less incentives from private sectors and thus required abundant funding from developed countries to meet the action of climate change. Moreover, the prior concern of the country is to run development projects to eradicate poverty, rise the literacy rate etc. and it makes difficult to run both simultaneously with limited budget.

The financial markets around the globe underwent refinement and results are sophisticated financial instruments, products and financing models. Supported by fourth technological revolution, rapid financialization and integration of markets occurred that brought together the private and public sectors to deliver sustainable development growth. Pakistan is comparatively a new player in the market and has been taking various initiative to compensate the future losses from carbon emissions.in Pakistan there is no separate, dedicated and independent institution for climate budgeting.

Due to this there is lack of accurate data on climate loses, and its influence on GDP, that's why Pakistan is lagging behind to take climate initiatives. The GCRI ranking 2020 enlisted Pakistan at fifth rank among the countries highly vulnerable to climate changes (Abubakar, 2020). Although, carbon emissions in Pakistan remains low around 0.8% of total emissions (Iqbal & Khan, 2018).

Being an emerging economy, Pakistan is facing severe funding issues to finance environmental projects in the economy especially after the outbreak of COVID-19. One of the reasons were the economic losses for Pakistan that were reported around Rs1.1 trillion during FY2021 (Rasheed, et al., 2021). Similarly, the fiscal deficit of Pakistan for the FY2021 was also remains 7 percent of GDP. Moreover, during the period 1998-2018, Pakistan has faced a loss of around \$3.8 billion due to extreme weather condition (UNDP, 2020).

In 2012, 331 billion dollars were distributed globally, whereas in the same year Senate assembly of Pakistan passed a resolution in which they stated that they need 7 to 14 billion dollars annually to decrease effects of climate change. But Pakistan's largest

donor was ADB which provided us 389 million dollars which is practically nothing when it is compared to desired amount. A huge funding is required from multiple sources including national and international modes, from private and public sources and from other instruments.

This chapter is based on climate financing for overcoming environmental losses in Pakistan. The climate financing of Pakistan both at domestic level and at international level. Pakistan is financing its climate related action through both domestic as well as from international financing. Furthermore, this chapter highlights the climate financing in Pakistan from international channels and also from domestic channels. The climate related domestic policies also discussed in this chapter. Moreover, climate change's impact on various sectors and financing is also discussed.

#### **4.1. Domestic Climate Financing**

Climate change is the biggest threat the world of today is facing and in Pakistan is a serious challenge for achieving Sustainable Development Goals (SDGs) pathway. Still carbon emission in Pakistan remains low compared to rest of the region but even than Pakistan is facing severe environmental issues including floods, drought, high temperature extra due to lack of financial resources and advanced technology.

Moreover, over the time the average temperature in Pakistan is also expected to be higher than the global average (MoCC, 2016). According to (WBG & ADB, 2021), daily average temperature of Pakistan may rise to 2.5° C by 2050 especially in the northern areas. Therefore, huge financial resources required from domestic and as well as international sources.

Despite this situation, the country's stance on climate change remains residual, tending to its consequences on the side lines, when and wherever they arise. While Pakistan's vulnerability to climate change continues to rise, its federal budgetary allocations to the cause have fallen. In the fiscal year 2021, the federal government allocated Rs. 5 billion for Ministry of Climate Change (MoCC) - a reduction of 34 percent from Rs. 7.5 billion in fiscal year 2020 (Shahzar, 2021).

The allocated budget in its entirety will be utilized by existing or on-going projects and will not be used to fund new initiatives. Furthermore, according to (IBID), around 98% of the MoCC's given resources have been specified for the incumbent Government's flagship afforestation initiative - the Ten Billion Tree Tsunami Programme.

#### **4.1.1. Nationally designed climate related policies**

As explained previously in the study, GOP has recently taken many Initiatives for reducing climate change consequences. However, for all this, government is taking considerable measures for overcoming all these issues. The government of Pakistan has identified the climate change vulnerability and started to address these problems in the early 1990s as the first cabinet committee on climate change were established in 1995. Pakistan has established its first National Environment Policy (NEP) in 2005 to highlight the climatic issues in the country and also to suggest a framework to overcome various climatic challenges such as pollutions including water and air pollution, biodiversity, natural disasters, desertification and climate change.

Later, in 2008, Pakistan has established the first task force on climate change with an objective to develop a climate change policy to help the government to pursue the overriding goal of sustainable economic growth by tackling the climate change challenges. Similarly, a National Climate Change Policy (NCCP) in 2012 were also determined to identify various carbon adaptation and mitigation measures into sectors like agriculture, industry, transport, and waste management etc.

And later in 2013, a framework for implementing climate change also observed

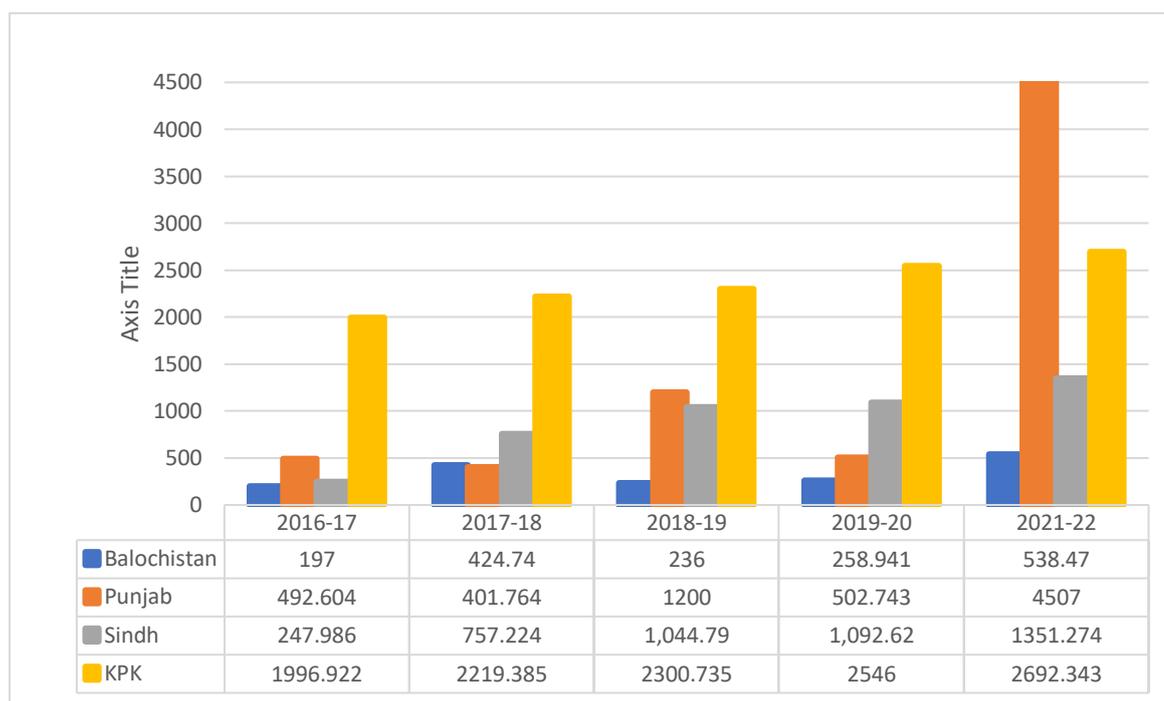
In June 2016, Pakistan submitted its first Intended Nationally Determined Contribution (INDC) to UNFCCC with an objective to reduce over 20% of projected GHG emissions till 2030 and to keep the global average temperature between 1.5oC – 2oC by utilizing around \$40 billion foreign grants for mitigation and adaptation (Jaffery, 2018). And after one year in 2017, the National Assembly of Pakistan approved the first Climate Change Act to aid the country for achieving its climate commitments under international climate commitments.

#### **4.1.2. Climate Actions at Provisional level**

An affective climate budgeting also knows as climate informed fiscal planning both at national and provincial level to reduce the impact of climate change and environmental degradation. inter-provisional collaboration and learning is also needed to strengthen the environmental sustainability.

It is observed that over the time, the allocation of funds at provisional level has been raised as shown in fig 3 Punjab is currently leading in climate change allocations, followed by Khyber Pakhtunkhwa, Sindh and lastly Balochistan – this order has varied

considerably over the years.



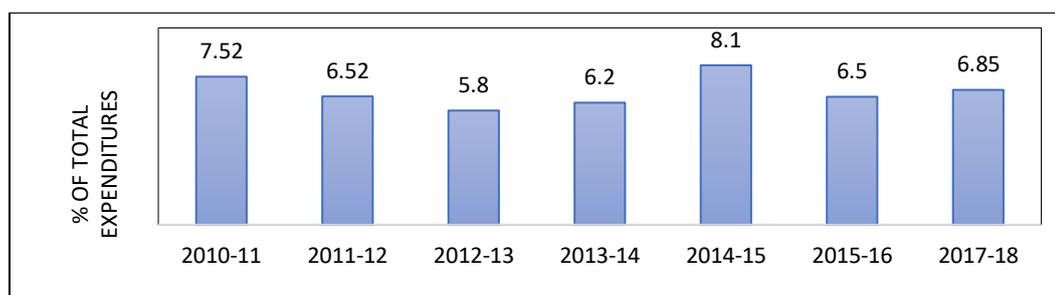
**Figure 3: Provincial Allocations for environmental protection (Million PKR)**

*Source: Ministry of Finance, GOP*

#### 4.1.2.1. Climate financing at Federal level

Even after designing a lot of climate policies and laws, still the domestic public funding for climate resilience in Pakistan is not enough. According to (UNDP, 201), the total climate related federal expenditures remain around 6.52% for 4 years (2010-14), out of which the adaptation spending remains around 25-60%, while the mitigation spending accounts 30-71% of climate related federal expenditures during under said years as shown in fig 4. Moreover, in 2017-18, climate related budget allocation at federal level remains Rs 341 bn around 6.85% of total budget (Economic Survey 2018). Similarly, the domestic climate funding for FY2019-20 remains Rs 8075 million that was higher in the comparison with previous year (Rs 412 in 2018-19).<sup>3</sup>

<sup>3</sup> <https://thepakistandaily.com/increased-share-of-renewable-energy-will-help-mitigate-impacts-of-climate-change/>



**Figure 4: Climate Change expenditures as % of total Federal Expenditure**  
*Data Source: (UNDP, 2017)<sup>4</sup>*

Similarly, climate change estimated federal expenditure were remains Rs 1417 million while the revised shows Rs 412 million during 2018-19 which accounts around 0.006% of total federal budget (Green budgeting in Pakistan). But for FY2019-20, the climate expenditure remains higher which accounts 0.09 percent of total budget as shown in Table 2.

**Table 2: Total Expenditure for FY2018-19 (Million PKR)**

	Non-Development Budget		Development Budget		Total		Percentage of Budget	
	E	R	E	R	E	R	E	R
Climate Change	642	502	7,579	7,573	8221	8,075	0.10	0.09
Transport	136,142	140,042	20,500	10,526	156,642	150,568	1.90	1.85
Energy	251,580	250,173	75,963	58,219	327,543	308,392	3.98	3.79
Total budget outlay					<b>8,238,073</b>	<b>8,135,188</b>		

*Source: Green Budgeting in Pakistan; E= estimated, R= revised*

#### 4.1.2.2. Khyber Pakhtunkhwa

Climate change also poses a great threat in KPK through extreme hot and cold weather and melting of glaciers. The provisional government of KP has taken some critical steps by establishing climate change cell which is working on provincial level and developed

<sup>4</sup> The value for FY 2017-18 has been taken from economic survey 2018.

climate institutions and policies. The KP government also has conducted a review of climate related expenditure for last five years. utilize resources for improving climate resilience and to reduce GHG emissions. In 2014 under EPA, the KP government established a Climate Change Cell (CCC) for facilitating climate change policy at provisional level. Beside this, KP drafted the first climate change policy at provisional level. Furthermore, in 2014, the provisional government took Green Growth Initiative to ensure sustainable growth and resilient mainly focusing on energy and forestry sector. On average the climate related expenditure in KP was remains around 7.6% of total KP budget. During FY2015-16, the climate expenditures were remains 8.9% of total budget of KP.

#### **4.1.2.2.1. Punjab**

Punjab is the most populous province of Pakistan, resultant most GHG emissions by anthropogenic activities. Transportation sector is the major source of carbon emissions with other sources. The climate condition in Punjab is not so good. At provisional level, the government of Punjab has started projects like “Restructuring and Capacity Building of Environmental Protection Agency (EPA) in order to enhance institutions and processes which take significant environmental decisions to achieve better results such as better environmental compliances, effective environmental governance, better monitoring system, efficient and productive ecological endorsement decisions (Hussainy, et al., 2017).

“Punjab Green Development Program (PGDP)” project started by Punjab government to reduce environmental degradation, by mobilizing funding from World Bank. The total financing of this project is around \$273 million out of which world bank has provided \$200 million in terms of loan. This initiative will start to be implemented in 2019-20 and around \$599 million were allocated to environmental sector.

Punjab contributes around 54% of total GDP of Pakistan. During 2019-20, the environment expenditure in Punjab remains around Rs. 0.50 bn of total expenditures which is slightly higher than the previous Rs 0.46 bn in 2018-19.

#### **4.1.2.3. Sindh**

Sindh is also contributing low for protecting environment. According to UNDP, (2017), Sindh spends roughly 4.1 – 6.9% of total provisional development budget on climate expenditures. The primary focus remains on adaptation measures as 79% of total

climate budget were allocated for adaption measures during FY2014-15. The water resources received 54% of total adaptation budget while the allocation for health and social services remains around 21% of total adaptation budget. Similarly, allocation for agriculture, transport and disaster preparedness remains 5%, 14% and 7% respectively (UNDP, 2017). The spending on mitigation is only 17% of total climate budget which is very low.

#### **4.1.2.4. Balochistan**

Balochistan is lagging behind the race of environmental restoration as yet no domestic climate polices has been introduced at provisional level. The climate expenditures in Balochistan remains between 7.3 – 11.3% of total provisional development budget. Same as Sindh, the core focus remains on adaption measures. 70% of total climate fundings allocated for adaptation measures (UNDP, 2017). The water resources took 51% and transport took 20% of total adaptation allocation. Similarly, the allocations for disaster preparedness and social and health activities remains around 9% and 12% respectively. Besides this, the budget allocation for mitigation measures accounts around 44% for energy sector and 51% for town planning. Only 5% of mitigation budget is allocated to forestry, transportations and carbon capturing activities (UNDP, 2017).

#### **4.1.2.5. AJK and GB**

The federal government allocates around 2-3% of federal budget to AJK, FATA and Gilgit Baltistan. The FATA and GB are completely relying on the allocation made from federal government. However, AJK is capable to generate 43-48% of funding by utilizing internal resources.

Around 25-30% of total development budget allocation to GB were remains around 25-30% of total budget allocation during Fy2011-14 (UNDP, 2017). Similarly, around 80-90% of these allocations were invested into water and power and infrastructure departments. Moreover, climate related projects are around 65-75% of total development projects in GB. The 17-19% of development budget in AJK is sponsored by federal funds out of which 40% or more accounts for communication and transport sector. At national level, the climate change related expenses remain around 7% of total budget as shown in table 3 below.

**Table 3: Domestic Climate Related Expenditures in Pakistan (Percentage of total aggregate budget)**

	2011-12	2012-13	2013-14	2014-15	2015-16
Federal	6.5	5.8	6.2	8.1	6.5
Khyber Pakhtunkhwa	7.2	5.3	7.1	9.7	8.9
Balochistan	7.3	10.4	11.1	11.3	11.9
Punjab	6.2	7.1	8.2	9.3	13.7
Sindh	5.7	4.2	4.3	6.9	7.2
FATA	13.1	12.5	11.6	11.9	10.2
Gilgit Baltistan	16	19	20	28	25.6
Azad Jammu & Kashmir	9.2	14.0	12.5	16.9	14.3
National	6.7	6.1	6.7	8.5	8.4

Source: (UNDP, 2017)

Besides all these fundings, many policies were also introduced to tackle these challenges at provisional level. These policies include Punjab Environment Policy (2015), KP climate change policy (2016), smog controlling policy (2017), Forest policy Punjab (2018 draft), Punjab & Sindh climate change policy (2018 draft). The objective of all these policies were to protect environmental degradation at provisional level. But due lack of interest by political parties and relevant authorities we are lacking behind than expected outcomes. According to Hina Lotia<sup>5</sup> policies can only provide a direction but the action plan and timeframe for implementing is needed.

Overall, climate change policy is excluded from a broader debate on development, financial markets and the economy. Pakistan must understand that climate change is a

<sup>5</sup> Environmental Sustainability in Pakistan, UNDP, 2020

macro prudent risk and must be urgently integrated into mainstream economic and development policy, taking a front seat in central planning within the country. If Pakistan is to thwart a full-scale climate catastrophe, climate change must become the lens through policies are designed and resources are utilized. While the price of acting now may be high, doing nothing may cost the country far more in future.

The 18th amendment was crucial in restoring the country's parliamentary framework and devolving power from the Federal government to the provinces. However, its hasty implementation may have limited institutional capacity and coordination between the federal government and provinces, as well as between the different sectors and departments present

Secondly, decentralization failed to extend beyond the provincial level, with power not effectively transferred to local governments. And finally, redistribution of roles and responsibilities was not adequately accompanied with an appropriate redistribution of finances, nor did most provinces possess the ability to raise their own funds (UNFPA, 2020).

On the whole, the devolution was enacted too hurriedly, with no buffer time provided to governments to allow them to adjust and work through the capacity challenges they faced (Ibid). This has impacted climate action at provincial and local level. This however, in no way, means to advocate that devolution was per se bad. It simply means to highlight some structural reasons behind a poor climate action at local level and show that effective climate action will require a significant effort for capacity building at the level.

#### **4.1.3. Other Initiatives by Government of Pakistan**

In contrast to all these policies presented by the relevant ministries at both federal as well as provincial level, the government of Pakistan has taken various initiative to reduce climate degradation as discussed below.

##### **4.1.3.1. Ten Billion Tree Tsunami**

The Ten Billion Tree Tsunami Program has also been introduced by the Prime Minister Imran Khan to overcome the worse effect of global warming in Pakistan. The major aim of this project is to make it easier for Pakistan to become more environmentally resilient by mainstreaming adaptation and mitigation concepts through environment-oriented activities such as biodiversity protection, better environment policy and forestation. The

first phase of billion tree project were implemented in all provisions for four years 2019-23 in which the target of regeneration and plantation of around 3.29 billion trees will be achieved. During July-Mar 2021, regeneration and plantation of around 814.6 million trees has been achieved. The total expected cost of this project is around Rs125.18 bn during phase I. Under PSDP 2019-20, Rs7.5 bn were allocated to this project out of which Rs 6 bn has been distributed to provinces and territories.

#### **4.1.3.2. Green Pakistan Program**

The Pakistan's Prime Ministry has launched a Green Pakistan program to increase the country's occupied forest areas. The core objective of this project is to help Pakistan to become more environment resilient by mitigation and adaptation measure. The program was implemented for five years (2016-21) by the MoCC as well as by provisional wildlife and forest departments in the areas including AJK, FATA and Gilgit Baltistan with cost of around Rs3.65 bn out of which around Rs. 554 million were released.

Similarly, the policy of National Electric Vehicle with a target of 30 percent shift on electric vehicle till 2030 in order to reduce carbon emissions. Similarly, globally first "zero emission" metro line project is also started in Karachi<sup>6</sup>. Additionally, in 20 cities, a "Clean Green Cities Index" also has been launched for moving towards sanitation and waste management. For protecting environment from plastic wastages, the Environment Protection Agency (EPA) of Pakistan has set complete ban on polythene bags including fines on the producers, shopkeepers and the consumer.<sup>7</sup>

#### **4.2. International Climate Financing**

The size of the economy of Pakistan is not enough to support financing for climate action solely therefore international climate financing required to meet the demands, mainly focuses of international aids to provide financial assistance, technical assistance, technological cooperation and funding through different mutual funds set by UNFCCC. According to UNFCCC it is estimated that \$40 to \$175 billion climate finance flows from developed to developing countries through developed countries government and other mutual funds. Similarly, Copenhagen and green climate fund (GCF), are the two main agreements of this initiative which provides more than 100 million dollars for the sake of mitigation and adaptation measures. Moreover, the green environmental facility

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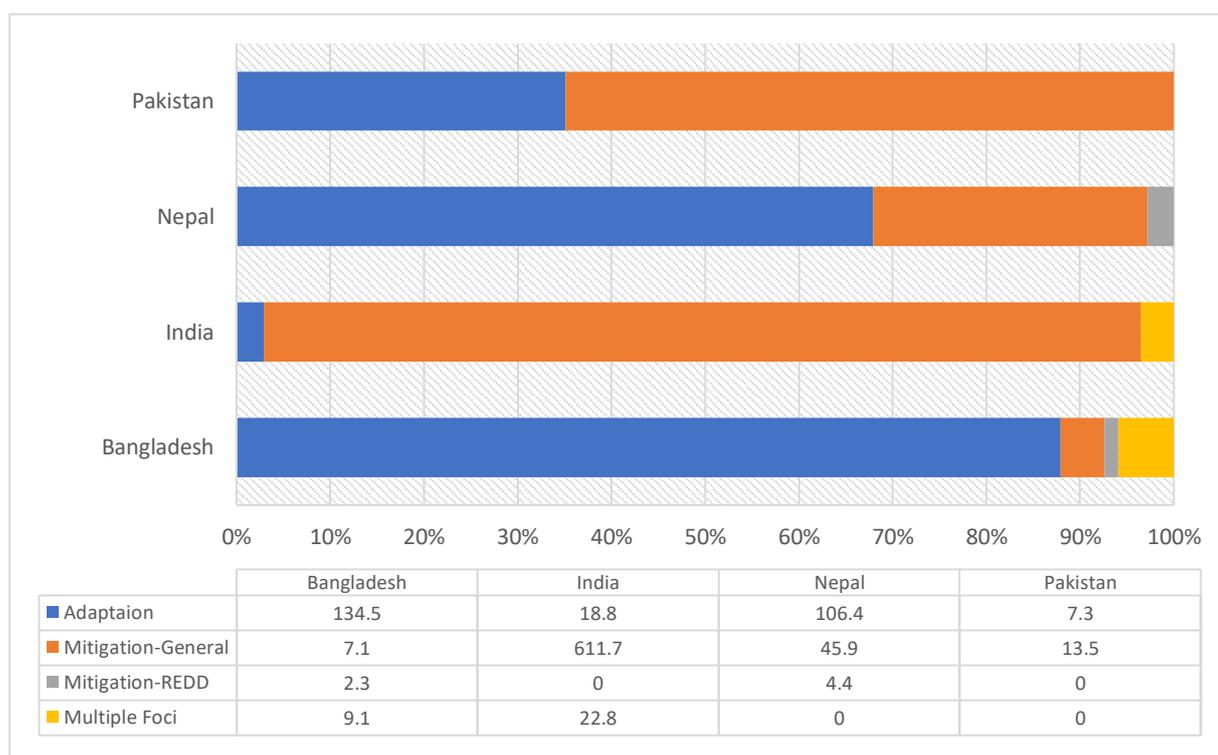
<sup>6</sup> Pakistan Economic Survey 2019-20

<sup>7</sup> Pakistan Economic Survey 2020-21

(GEF), least developed countries fund (LDCF) and adaptation fund (AF) also remains the important drivers to generate and accumulate funds from developed to developing countries.

#### 4.2.1. Climate Financing through Multilateral Channels

Over the time Pakistan has been receiving climate fundings from international sources which is low in the comparison with other countries. Pakistan received minimal adaption funding which remains the primary source of financing for adaptation activities (Parry, Review of Current and Planned Adaptation Action in Pakistan, 2016). Accordingly, around \$27.8 million USD as climate funding were received by Pakistan from bilateral and multilateral funds out of which only \$7.3 million were for the adaptation measures. It is observed the Pakistan has comparatively received less financing as compared to other South Asian economies as shown in fig 5.



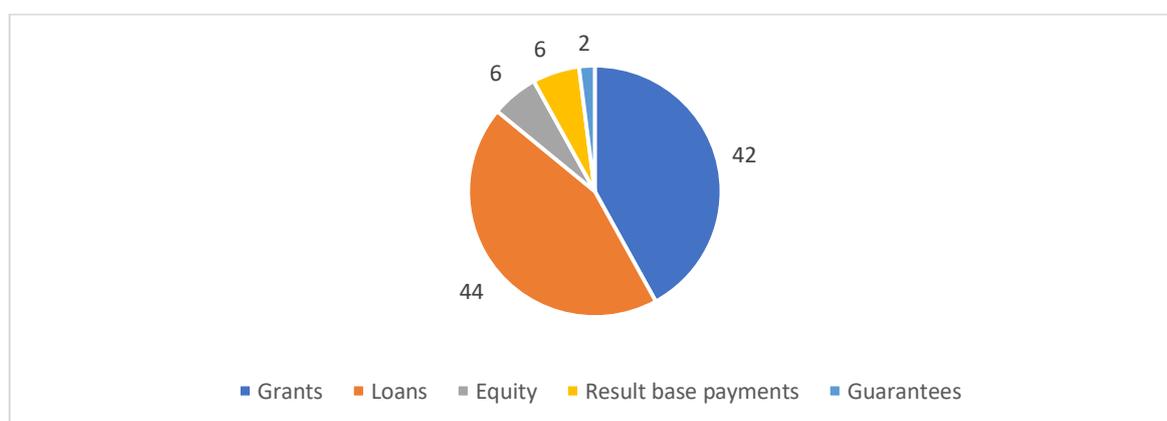
**Figure 5: Climate funding from Bilateral and Multilateral sources for South Asian Economies (2015)**

#### 4.2.2. Green Climate Fund (GCF)

The Green Climate Fund (GCF) was founded in Durbin in 2011 at COP17 that was established under UNFCCC framework. The purpose of this initiative was to make significant contributions towards executing Paris Agreement and its adaptation and mitigation target through paradigm shift in emerging nations towards less emissions

and climate resilient growth. This initiative set a target to generate \$100 bn by 2020 for providing financial assistance to developing economies for addressing adaptation and mitigation measures for climate change. Being a largest climate change fund, GCF is playing its crucial role for supporting climate actions in developed countries. Emerging economies can approach to GCF through International commercial banks, UN bodies and MDBs and also directly through authorized Regional, Sub-National and National implementing authorities (Watson & Schalatek, 2019).

Currently, GCF is investing around \$8.9 billion globally for low emissions and climate resilient development through 177 projects which will reduce carbon emissions by 1.8 billion tones. Around 67% of total funding is to the public sector while the remaining 33% is to the private sector. The disbursement of this funding is shown in fig 6.



**Figure 6: Nature of GCF funding disbursements in percentage**

The GCF is financing 3 ongoing projects in Pakistan with \$668.7 million funding. For these, the total GCF financing remains around \$213.5 Million while the co-financing for these projects remains \$455.2 million.

#### **4.2.3. Global Environment Facility (GEF)**

The Global Environment Facility (GEF) was formed in 1991 through collaboration of 18 international organizations i.e. UN bodies, MDBs, and NGOs alongside 183 economies to tackle environmental issues. During first three years, \$1 billion funding was allocated to encourage efforts in emerging nation with focus on four key areas; biodiversity, ozone depletion, climate change and international waters. For the GEF’s 6th replenishment (2014-18), 30 contributor economies pledged \$4.43 billion across all focus areas including \$1.26 billion for supporting climate change areas (Watson & Schalatek, 2019). Similarly, for GEF’s 7th replenishment (2019-22), nearly 30 economies pledged around \$4.1 billion for five priority areas, reduced climate financing

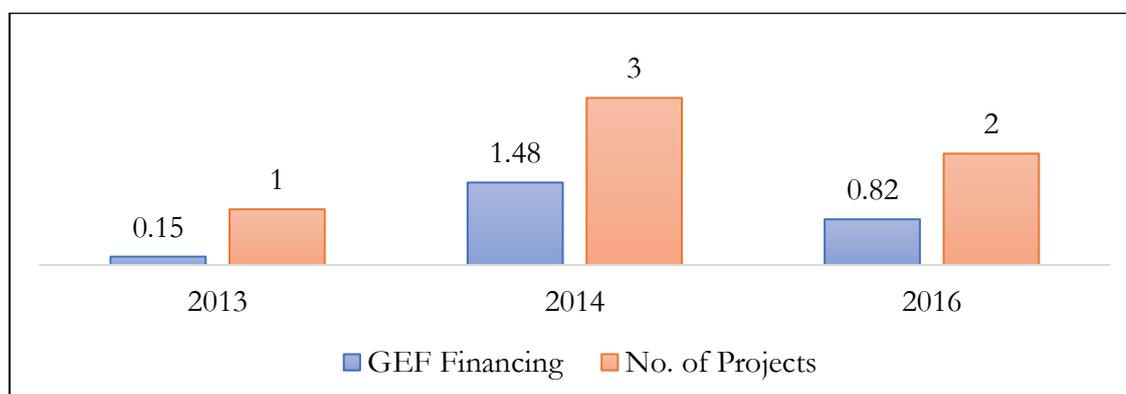
that was \$900 million.

Till date, Pakistan has received funding of around \$258.83 million funding out of which \$96.06 million were for national projects while \$162.76 million for projects at regional and global level. Similarly, the total co-financing for these projects remains \$710.13 million as shown in Table 4.

**Table 4: Total Fund received from GEF by Pakistan (Million USD)**

<b>Funding Organization</b>	<b>Project Level</b>	<b>Total Number of Projects</b>	<b>Total Financing</b>	<b>Total Co-financing</b>
<b>GEF</b>	National	36	96.06	359.13
	Global/Regional	19	162.76	351.00
	<b>Total</b>		<b>258.83</b>	<b>710.13</b>
<b>Special Climate Change Fund (SCCF)</b>	National	1	3.31	14.7
	Regional/Global	1	99.20	591.50
	<b>Total</b>		<b>102.51</b>	<b>606.2</b>

According to (Timperley & Pearce, 2017), Pakistan has received around \$2.4 bn environmental funding under different projects from GEF as shown in fig 7.



**Figure 7: Global Environment Fund financing to Pakistan (Funding (\$ Billion))**

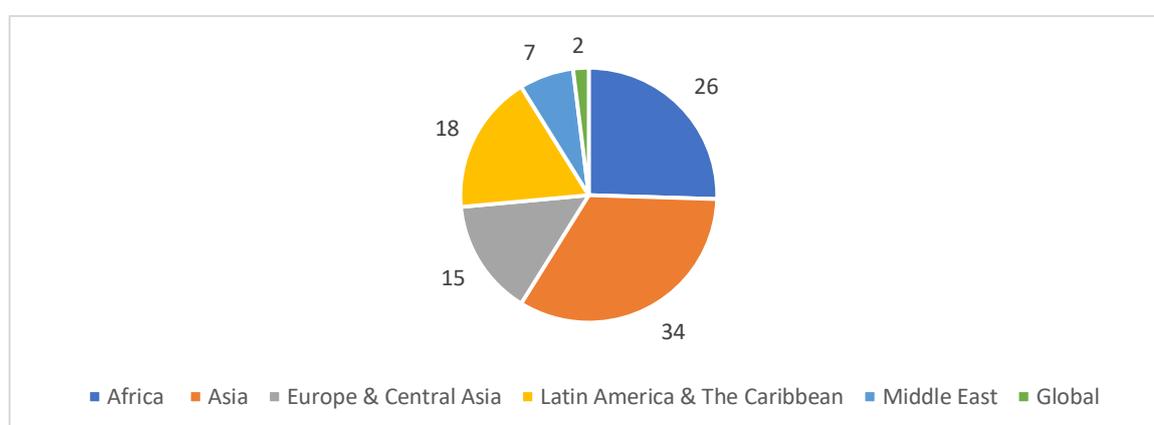
#### **4.2.4. Fast Start Finance**

During climate change conference organized by United Nations in Copenhagen 2009, emerged economies pledged to contribute some \$30 bn for supporting adaptation and mitigation efforts in emerging economies during 2010-12. The main donors of these funding were Japan, United Kingdom, United States, Germany and Norway. According to (Nakhoda, et al., 2013), around 45% of these funds were delivered in terms of grants

and around 47% were delivered in the form of guarantees, loans and insurance. The Asia and Pacific region received around 43% of these funding.

#### 4.2.5. Climate Investment Fund (CIF)

The Climate Investment Fund was introduced in 2008 is organized by World Bank but work in collaboration with regional development banks such as Asian Development Bank (ADB), African Development Bank (AfDB), Inter-American Bank (IDB), and European Bank for Reconstruction and Development (EBRD). The total share of CIF in Asia is around 34% but still Pakistan is not a part of this fund. The fundings remains around in Bangladesh and India. Pak can be part of this to tackle climatic issues.



**Figure 8: CIF Funding Implemented by Region**

#### 4.2.6. Adaptation Fund

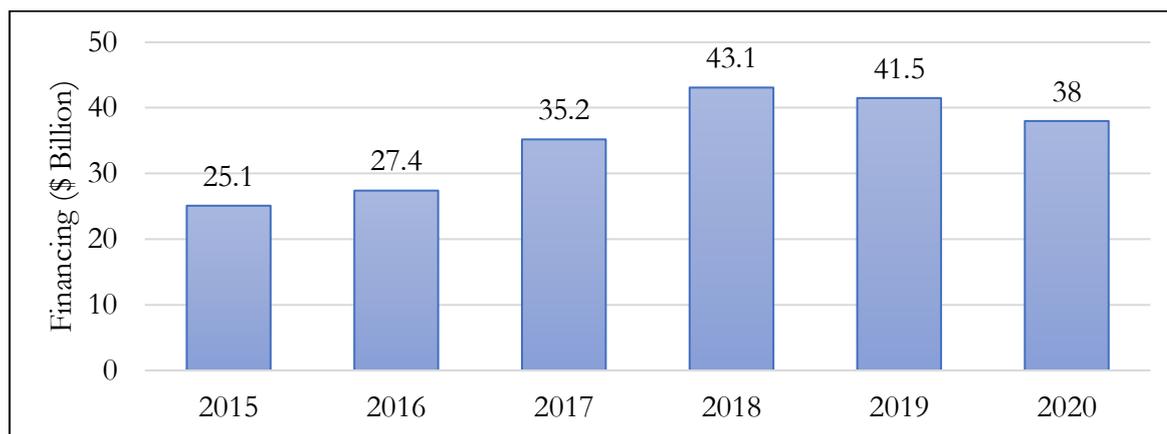
The adaptation fund is used to mobilizing resources to build climate resilience in poor and developing countries. the second oldest fund which was formed in 2001 as a part of Kyoto Protocol with an aim to providing financing to mitigation and adaptation efforts especially in emerging economies. Since 2010, around \$850 million amount is pledged by Adaptation fund for 123 projects in almost 100 economies. Adaptation fund is used in sustainable agriculture, forest projects, water resource management and most part of these funding used in clean energy projects.

Pakistan is also part of this fund. From 2011-15, Pakistan has received 390.6 million for disaster risk management in Pakistan. Similarly, recently, total amount of 609.4 million funding is approved for urban development.

#### 4.2.7. Multilateral Development Banks (MDB's)

These multilateral banks are the main drivers of flow of funding from developed

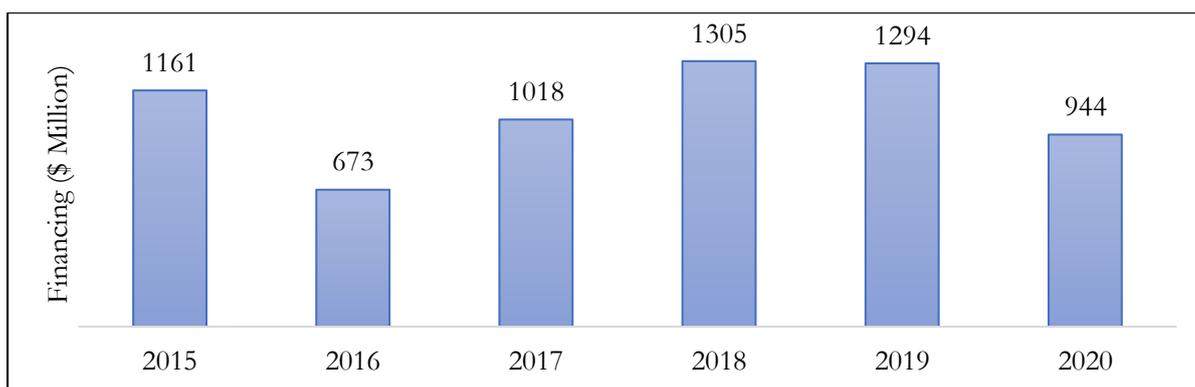
countries to developing countries. Numerous Multilateral Development Banks (MDBs) committed climate financing of around the total MDB's commitments remains around \$61.6 Billion during 2019 which rises to \$66 bn during 2020 While the commitment for emerging economies declines form \$41.5 billion in 2019 to \$38 billion in 2020 as shown in fig 9. In 2020, around \$38 bn were allocated to low- and middle-income economies. The contribution of World Bank remains higher among the other regional banks (\$18.8 billion).



**Figure 9: MDBs climate financing commitments for emerging economies**

During 2020, around \$50 billion of total MDB financing was linked with climate change mitigation having an objective to reduce global warming through less GHG emissions. Nearly 50% of total mitigation funding was allocated to low-income economies. Similarly, around \$16 billion were invested in adaptation measures to assist economies build resilient to the growing consequences of climate change such as extreme weather, rising sea levels and flooding etc. Majority of the adaptation funding (around 83%) is allocated to emerging economies (MDBs', 2020).

The Asian Development Bank provided a funding of \$27.9 bn to Pakistan for 708 in terms of loans, grants. Similarly, Pakistan has received around \$6395 million from MDBs' in terms of climate financing during 2015-20 as shown in fig 10.



**Figure 10: Total MDBs climate financing in Pakistan (Million USD)**

### **4.3. Financing Instruments and supporting policies**

Beside all these domestic and international measures, Pakistan also has some other instruments through which it can reduce carbon emissions and also generate further fundings for clean and green environment.

#### **4.3.1. Conventional tools: climate fees, loans and taxes**

**Climate Fees:** The most common conventional tool is fees which can be imposed upon (entry fees or departure fee) or can be self-assessed (Agri-cooperative fee or forest fee). Although fee generates a stream of revenue but is hardly enough to cover the cost of the climate program.

**Loans:** Climate finance loans can range from nominal amounts to billions like World bank offers small micro loans on one hand while invests in national scale multi-million\$ energy projects on the other hand. Loans can also take the shape of grants in certain cases where long run repayment terms, turn loan into grants.

**Subsidies and Taxes:** In climate finance, the objective of subsidies is to encourage certain behaviors like avoiding deforestation or use of less chemicals harming environment. Similarly, climate control taxes also generate a stream of revenue. Although it is resisted by public and industries, but several developing countries are pursuing the implementation of Carbon tax to generate climate funds.

#### **4.3.2. Debt Swap for green recovery**

The debt profile of Pakistan remains high during last decade. Country report (IMF, 2021) indicated that Pakistan’s external debt will reach to around \$128.83 billion by 2023. The total debt repayments of Pakistan will remain around \$27.8 billion from July 2020 till June 2023 (Rana, 2021), out of which the actual amount is \$23 billion while

the rest of the amount (\$4.6 billion) will be the interest payment. Statistics from Ministry of Economic Affairs highlights that the loan repayments during FY2020-21 will be \$9.8 billion, while during 2021-22 it will remain around 8.8 and during FY2022-23 it will be around 8.3 billion as shown in figure below. Through debt swap for nature, Pakistan can utilize these debt repayments for achieving green climate instead of paying back to creditor economies.

Similarly, another way to generate funding is by issuing green bonds. During 2019, the green bond market was grown around \$200 billion. WAPDA has recently launched green bonds of around \$500 million which is a positive initiative for promoting green recovery. Pakistan can also generate funding by launching green bonds for local as well as for international market.

#### **4.3.3. Green Banking Guidelines**

Green banking also known as sustainable banking focusing on establishing framework for environmentally and socially sustainable lending, in which mainly focused on providing loans for green capacity building and issuing of green bonds. global green bond market has grown to roughly \$200 billion in 2019, from nothing five years ago. Most of the Asian and pacific banks and regulatory authorities are ready to finance against climate for sustainable development. According to a survey conducted among 18 central banks of region 16 out of 18 agree that low-carbon finance should be area of focus.

Green banking in Pakistan at initial stages. Issuing of Green bonds through green bank are the most innovative instruments of climate finance that tie up the bond issuance proceeds to climate-friendly investments. These include energy efficiency, climate change adaptation, waste management and sustainable energy investments. The green bonds exposure exceeded \$ 118 billion in 2018. Bond issuance can be done by supranational institutions (International Development banks), private companies or public entities (Federal, state, provincial Rising) green financing for adopting green banking may reduce international pressure from the international corporations like International Finance Corporation (IFC). SBP should reward commercial banks to raise and induce climate finance. Banks should discourage loans for environmentally unfriendly projects or limit them to a certain percentage sometimes.

#### **4.3.4. Carbon Pricing**

The carbon pricing is considered as an efficient, significant and straight forward approach for reducing GHG emissions and generating finance as well. It pertains to the process through which the environmental, social and economic costs related to GHG emissions may recover. It ensures to incorporate emission costs or at least some of its portion into the economy. Globally, around \$53 billion revenue would be generated and 21.5% of carbon emission would be covered under this initiative in 2021 which remains higher in the comparison with previous year 2020 which was around 15.1% (WB, 2021). Similarly, around \$40-80 USD is required for per ton carbon emission for achieving the 2° C goal.

The Punjab government designed the emission trading system for attaining low carbon emissions in the province because of its flexibility and cost-effectiveness in implementing the policy. The three years strategy under phase-I would achieve reducing emissions of 20%, 30% and 50% respectively. Industries who are responsible for emitting above 70% of emission needs to participate under this initiative. All stakeholders under this system consider the cost of purchasing permits to the abating cost of additional unit.

Pakistan is discovering paths for carbon pricing especially for domestic actions and attracting investments for climate change and also to explore the impact carbon markets for achieving country's NDC. Pakistan in Dec 2019 also established a National Committee on the Establishment of Carbon Markets for observing carbon market role in delivering country's NDC and also to identify the potential and challenges for enhancing emission data (WB, 2021).

## Chapter 5

### Results and Findings from perception survey

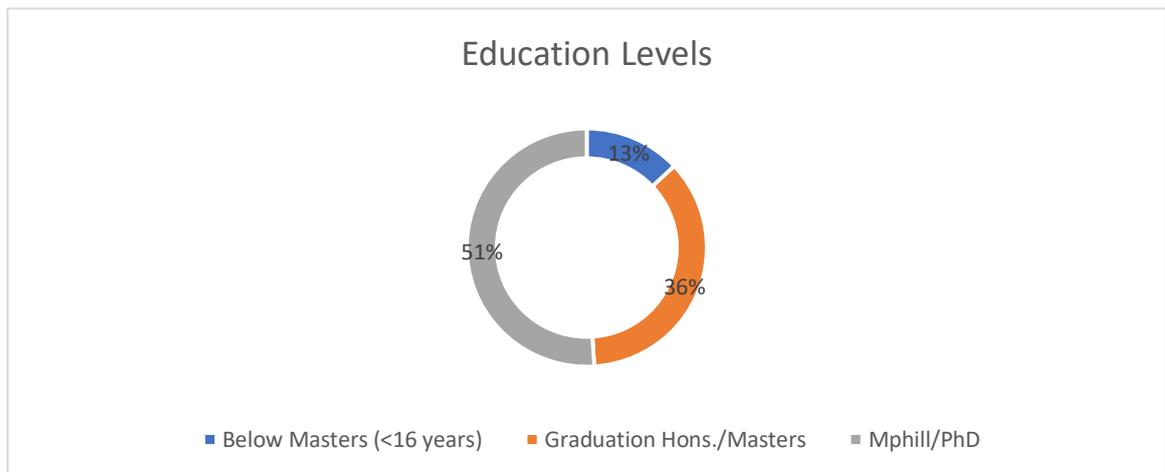
The first part of our findings includes details about related to gender, age, occupation, education level name and email (control variables). The second part includes on climate finance landscape Pakistan.

Our sample is comprised of 100 respondents. These are selected randomly from education, services and professional skills industries. A structured questionnaire was administered (Annexed).

#### Summary of Samples

	Median	Sample Size	Minimum	Maximum
Age of Respondent	32.30	100	19	80

It is observed that median age is 32 years. Most of respondents have at least 18 years of education (51%) it is followed by 36% of respondents with Graduation (honors) and Masters Degrees.

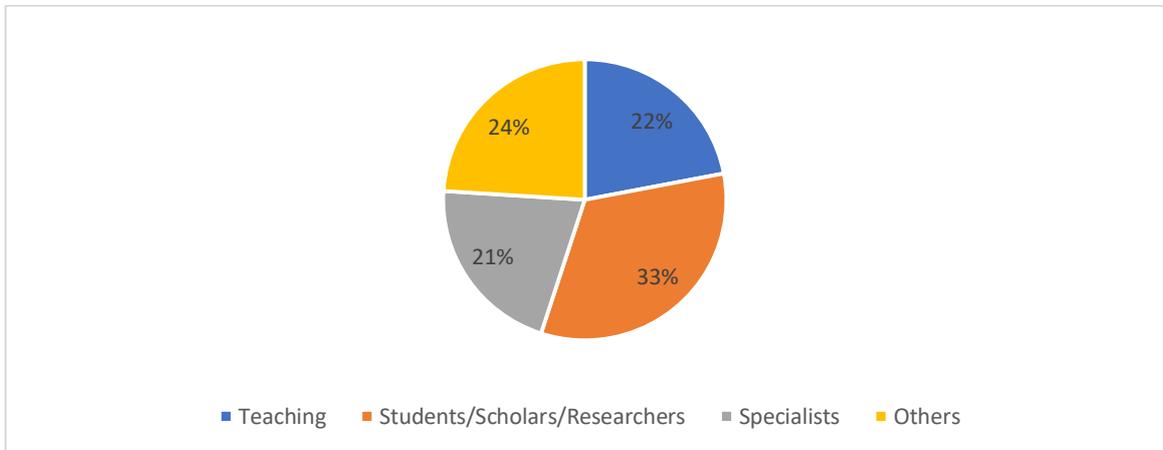


**Figure 11: Education level of respondent**

	Mean	Sample Size	Minimum	Maximum
Total Working Experience (years)	8.940	92	0	0
Current organization Experience (Years)	6.429	91	40	50

Respondents are professionals from educational, Research and Government organizations from Development sectors. They have average overall experience of approximately 9 years of working and 6 years of working in their current positions.

Major occupations of respondents are Researchers or students. That contributes 33% of total sample (100). We also have 21% cohort of specialists where professional engineers, environmentalists, subject specialists etc. are participating in this survey.



**Figure 12: Professional Occupation of Respondent**

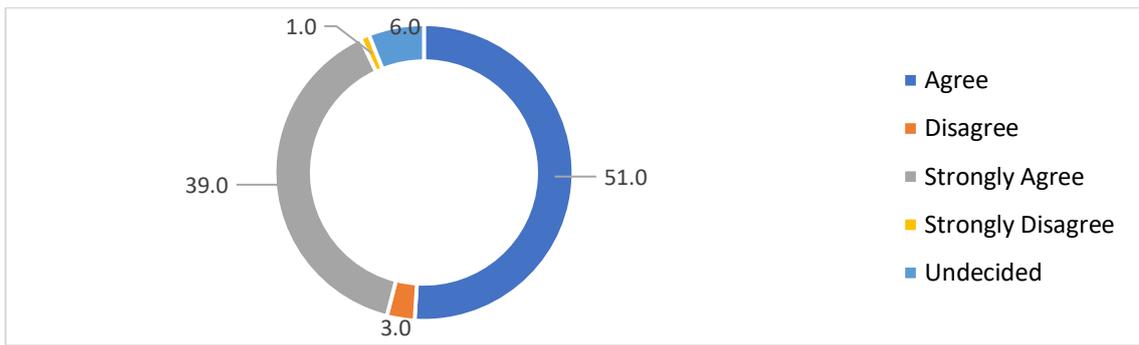
Second section is based on the findings constructed from the online questionnaire. The questions are mainly based on the current climatic condition in Pakistan, the potential and role of public and private sector and the role of monetary sector especially the State Bank in order to tackle the issues of climate change. Moreover, what challenges are government facing while generating climate financing. The prevailing environmental condition of Pakistan is badly affecting due to climate change. According to the questionnaire, 68% of the respondent agreed that climate change has major effect in Pakistan as shown in fig 13.



**Figure 13: To what extent do you think climate change is affecting Pakistan?**

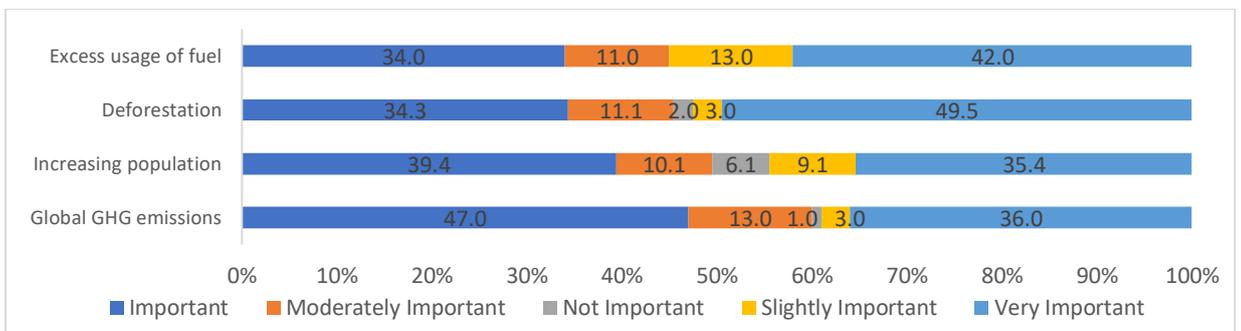
This climate change is not only affecting the environmental condition but also causing poor economic condition in the country. The responses indicates that 51% of the respondents agreed that climate change weakens the economic condition of Pakistan whereas only 3% respondents disagree this as shown in fig 14. According to UNDP (2020), in last 20 years the economic loss of Pakistan due to climate change is \$3.8 billion. Tackling climate issues will not only improve the environmental quality but

improve the economic condition of the country.



**Figure 14: Do you think climate changes have adversely affected country's economy?**

After the industrial revolution, the environmental degradation started to boost which is difficult to handle in the current era. Numerous factors are responsible for this. According to questionnaire, 49.5% of people think that deforestation is the major reason behind climate change in Pakistan. While, 42% respondents consider excess usage of fuel as a major reason for climate change as shown in fig 15. Besides this, the higher GHG emissions is also a big factor as 47% of the respondents also highlighted this as a major reason. Since 1947 to 2010, the total forests area reduced from 33% to 5% in Pakistan. Only during 2020, 69.2 hectares of tree has been lost which covers around 19.6 kilotons of CO<sub>2</sub> emissions in Pakistan<sup>8</sup> which ultimately rises the GHG emission.

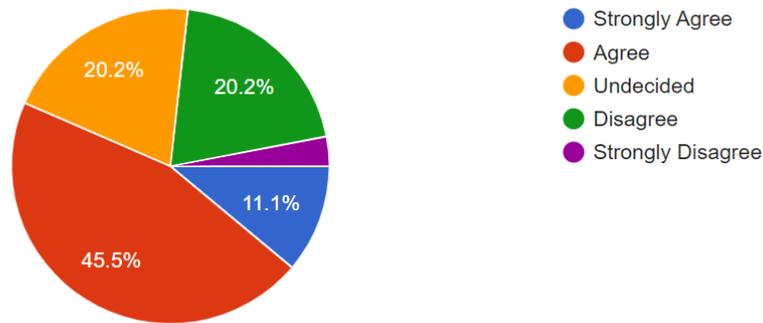


**Figure 15: In your opinion, which can be the major reason of climate change in Pakistan**

The climate condition of Pakistan is not so good and government is taking various initiatives to protect the environment. Now the question arises that does climate change is the priority area of government or not? As per the questionnaire, 45.5% of the respondents agreed that climate change is the priority area of Pakistan. While 20.2% of

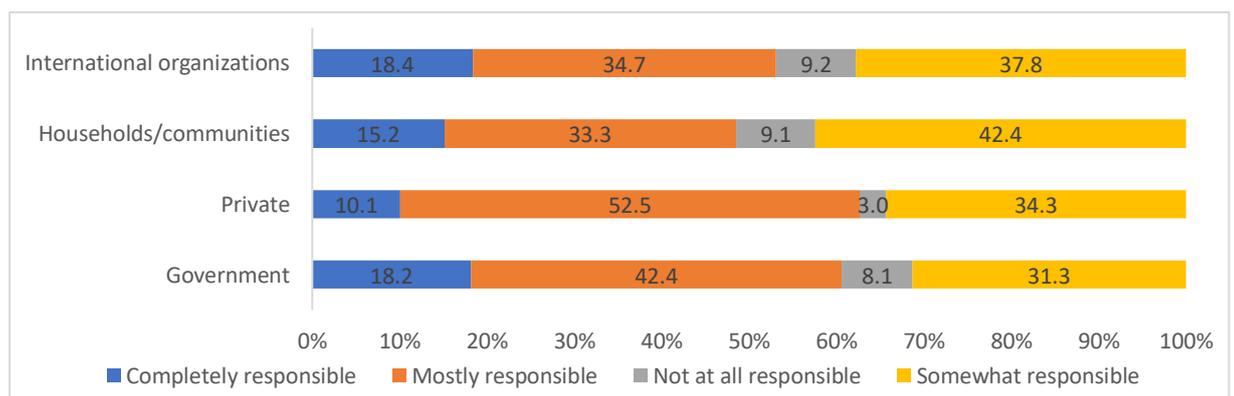
<sup>8</sup> <https://www.aninews.in/news/world/asia/rapid-deforestation-puts-pakistans-climate-policies-in-jeopardy20210609182354/>

the participants disagree with this statement as shown in fig 16. The current focus of government is to tackle the climate issues to under Paris Agreement and also to achieve SGDs agenda 2030. For this government has took initiatives like Ten Billion trees tsunami, clean green Pakistan and electric vehicle policy which shows the prior commitments of government.



**Figure 16: Do you think climate action is priority of the government in Pakistan?**

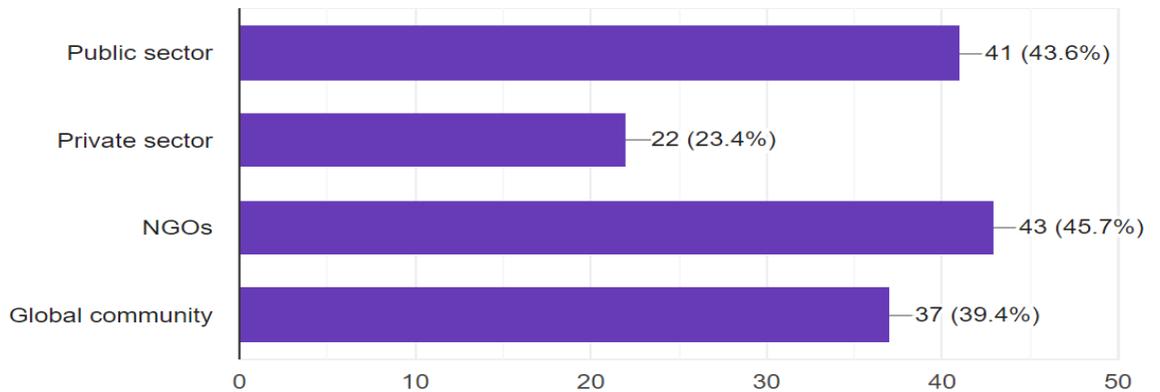
The government is trying to control climate change on its end but it is not only the responsibility of government to tackle these issues solely but there is also role of community and private sector as well. According to the questionnaire, 52.5% respondent think that private sector is more responsible for tackling climatic measures in order to minimize the adverse impact of climate change. While 42.4% people think that it is the responsibility of government as shown in fig 17. The private sector can contribute through ensuring green measures and to finance green projects.



**Figure 17: Who do you think is mainly responsible for taking mitigation and adaptation measures to minimize the adverse impacts of climate change?**

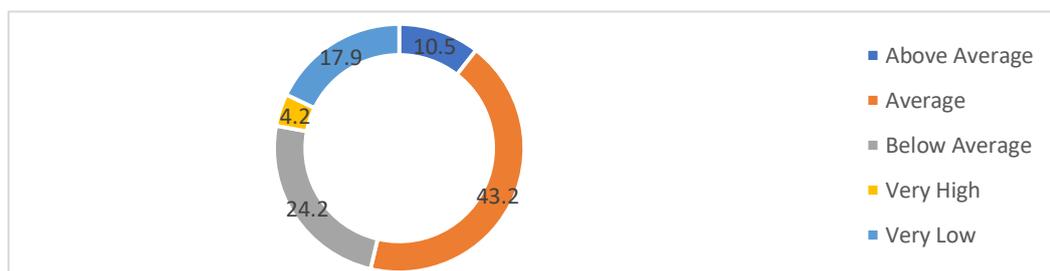
Now the question arises that who is contributing more towards climate financing? The majority of the respondents considered that NGOs are contributing major share towards

climate financing while the government is enlisted as the second major contributor as show in fig 18.



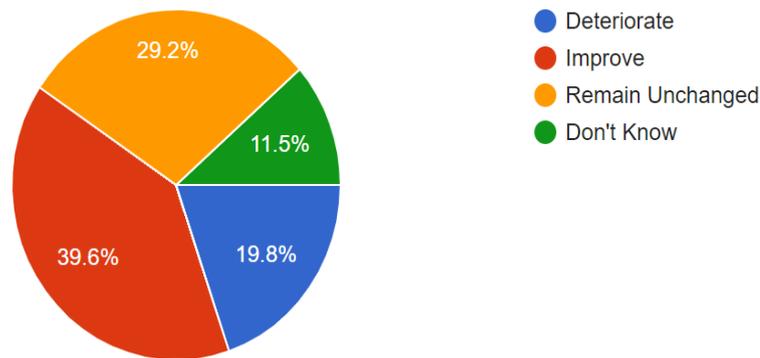
**Figure 18: In your opinion, who is contributing more towards climate finance at domestic level?**

As, public sector is mainly responsible for climate financing but what potential Pakistan has to provide climate funding at domestic level. According to the questionnaire, 43.2% of total respondents think that Pakistan has a moderate level of capacity to finance climate related initiatives in Pakistan as shown in fig 19. While 24.2% of the respondents think that the capacity is below average. Now the question arises that what could be the scenario in future. According to the responses, around 39.6% of the participants think that the financing capacity of Pakistan in future will improve which ultimately improve the climate condition of the country as shown in fig 20. The options through which Pakistan can boost its potential is through designing and implementing climate actions and policies.<sup>9</sup>



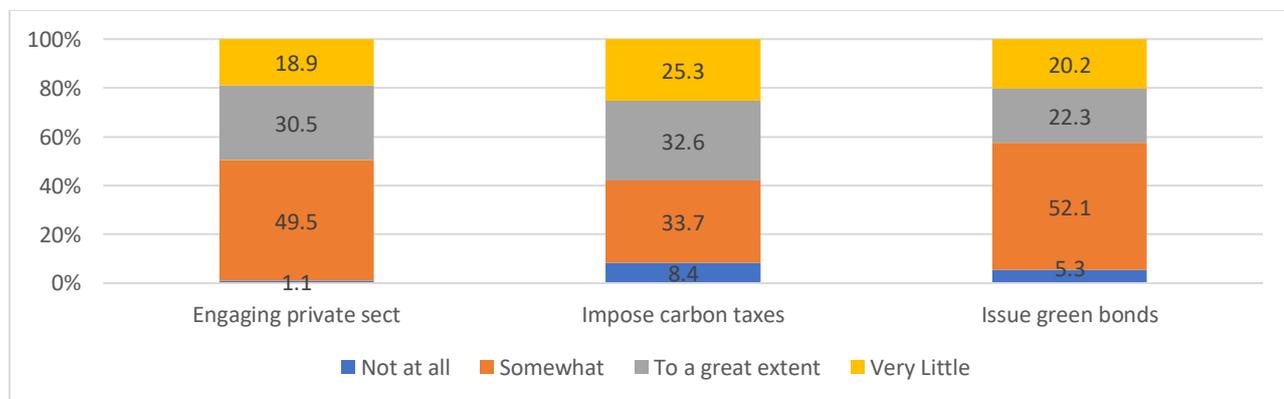
**Figure 19: What do you think is Pakistan's capacity to finance climate action?**

<sup>9</sup> <https://cdkn.org/story/feature-how-can-pakistan-best-leverage-climate-finance>



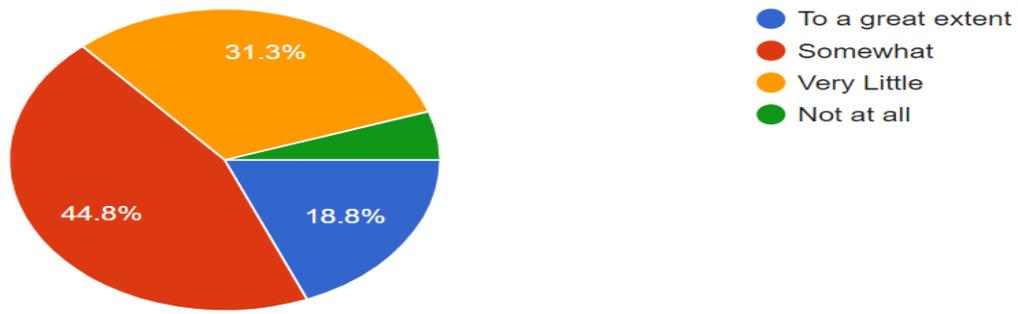
**Figure 20: What do you think is likely to happen to Pakistan's capacity to finance climate action from domestic resources in future?**

With a limited fiscal stimulus, it is a great challenge for the government to tackle abundant climate issues and to finance the climate related projects. And thus, additional funding is required to handle all these. According to the responses, imposing carbon taxes and engaging private sector could be an easy and efficient way through which the government can generate excess climate financing as shown in the fig 21. Imposing carbon taxes and pricing can generate fiscal stimulus and also can reduce carbon emissions. In 2021, roughly around \$53 billion has been generated and 21.5% carbon emission has been reduced under this initiative worldwide.



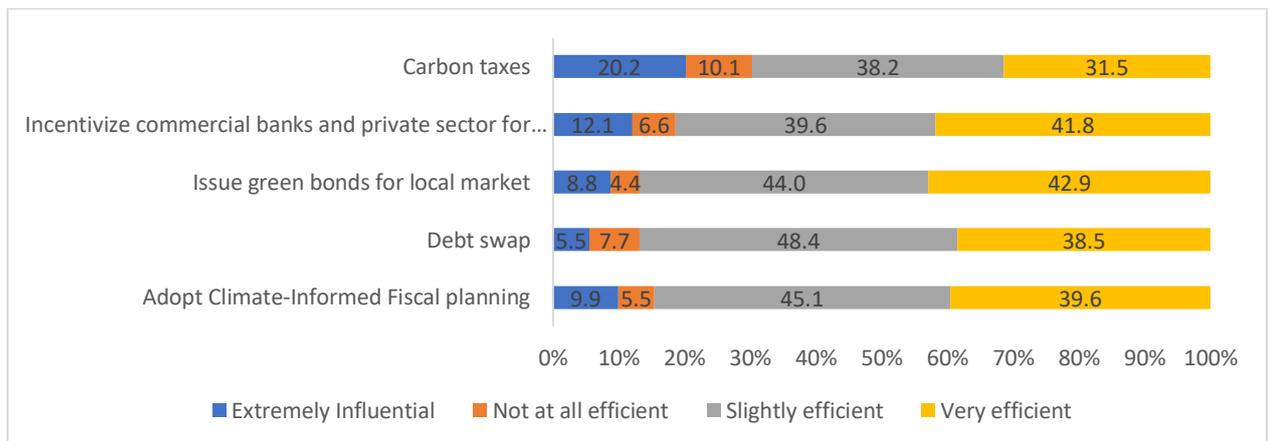
**Figure 21: To what extent the government can manage the excess financing burden of climate finance.**

Yet, Pakistan is lagging behind to generate climate financing at domestic level but still Pakistan has great potential to generate financing at domestic level in order to tackle all climatic issues. According to the survey, majority of the respondent (44.8%) indicates that Pakistan has potential for generating climate financing as shown in fig 22.



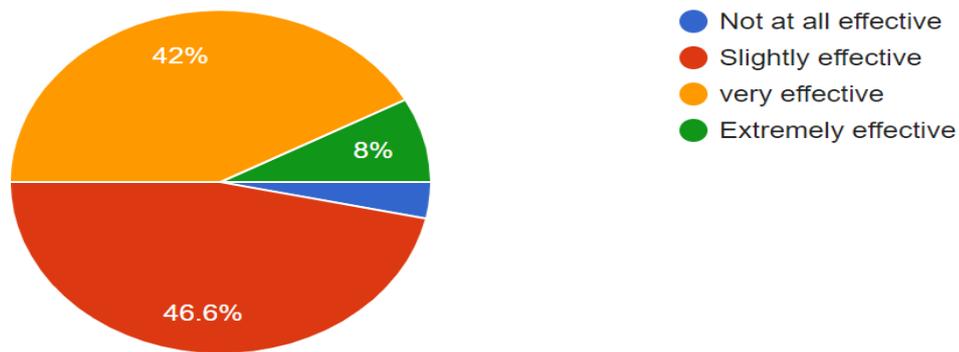
**Figure 22: Does Pakistan have potential to generate climate financing at domestic level?**

As Pakistan is having potential to rise climate financing but there is need to figure out the efficient ways through which Pakistan can efficiently generate climate financing. According to the respondents, giving incentives to commercial banks and private sector will provide more fundings for climate projects Similarly, debt swaps, green bonds and carbon taxes is also prominent for generating funding at domestic level as shown in fig 23.



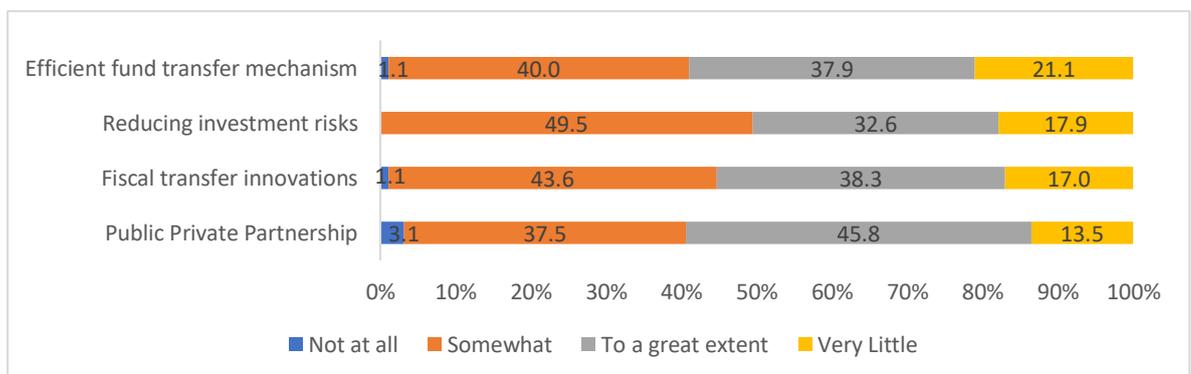
**Figure 23: In your opinion what could be the most efficient way to rise climate financing at domestic level? (Percentage Respondents)**

In the post pandemic era, debt swap is considering a prominent tool for achieving green recovery. Pakistan is also interested in this initiative. But does this initiative help to resolve the climatic issues? According to 42% of the respondents, debt swap is very effective while 46.6% shows less slightly effectiveness as shown in fig 24.

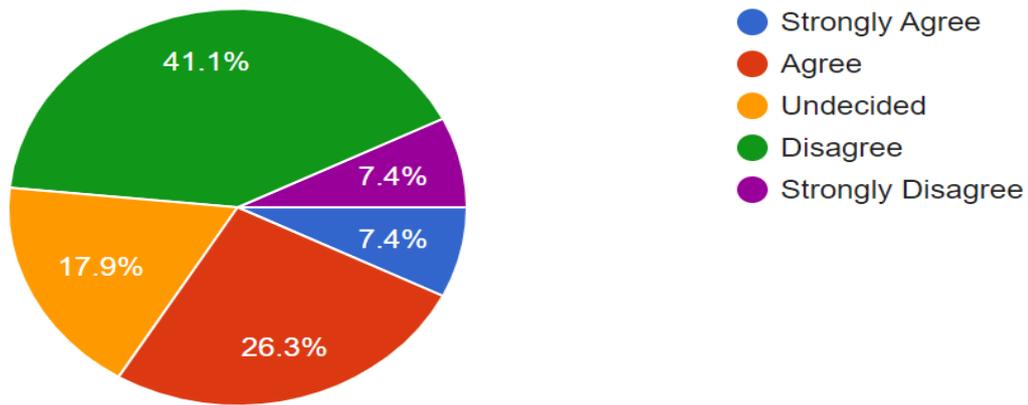


**Figure 24: Do you think debt swap is a strong tool to generate climate funding?**

Engaging private sector is an efficient tool which ultimately aid the government in order to tackle climate issues and helps to generate more funding. Now the question arises, what measures need to be taken for engaging private sector? According to the questionnaire, public private partnerships, reducing investments risks and efficient funds transfer could be the ways though which we can engage private sector as shown in fig 25. Currently, the private sector is not engaged to its maximum potential and the reason is somehow less incentives. The responses show that the engagement of private sector into green initiatives is low as shown in fig 26.

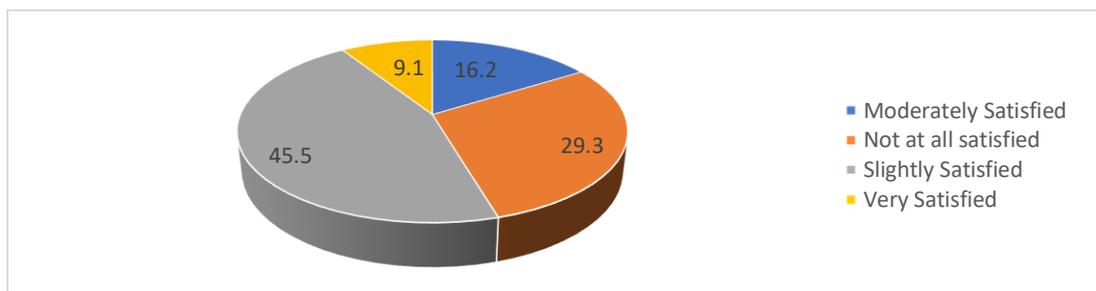


**Figure 25: How effective the following can be to engage private sector to generate climate funding?**



**Figure 26 : Do you think private sector is engaged at its maximum potential?**

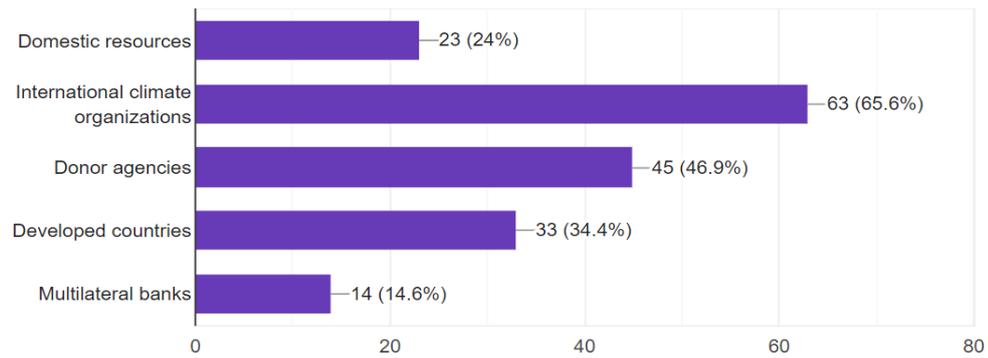
Government is taking different initiatives at domestic level but efficiency and satisfactory of these initiatives is important. According to the survey, 45.5% of the respondents are slightly satisfied with the measures taken to reduce GHG emissions in Pakistan as shown in fig 27 while only 9.1% people are very much satisfied which such measures adopted at national level.



**Figure 27: How satisfied you are with the measures taken to reduce GHG emissions in Pakistan?**

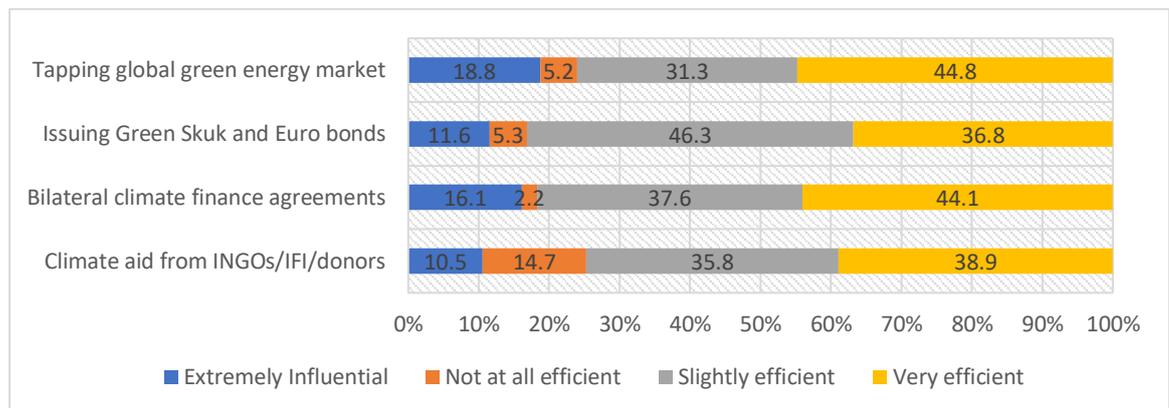
As the domestic climate financing of Pakistan remains low which was roughly around 8.4% of total development budget in FY2015-16. Now the question arises that besides from public funding, from where Pakistan is getting a major share of climate financings. According to the respondents, 65.6% of the respondents think that international climate organizations are contributing major share to provide climate financing to Pakistan. According to the CDKN, (2013), the annual international financing for climate change in Pakistan is roughly around \$500 billion, which is low in the comparison with its annual requirements.<sup>10</sup> Similarly, as discussed above, the international climate funds including GCF, GEF running mega green projects in Pakistan.

<sup>10</sup> <https://cdkn.org/story/feature-how-can-pakistan-best-leverage-climate-finance>



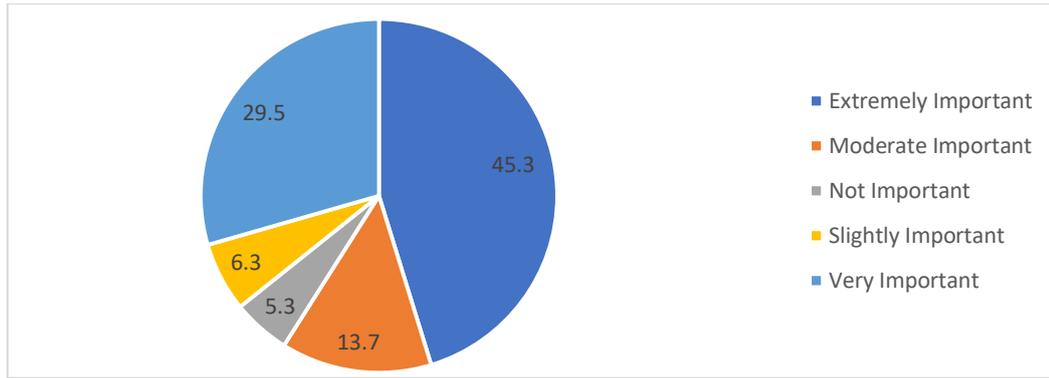
**Figure 28: From where, Pakistan is currently getting most of its climate fundings.**

It is observed that the climate financing from international sources is also low in Pakistan which needs to be increase. For this what could be the possible options for Pakistan to engage more fundings. The responses show that tapping global green market as well as bilateral climate agreements could be the best options for this as shown in fig 29. But besides this, we cannot neglect the fundings from green bond market and also from international donor agencies.



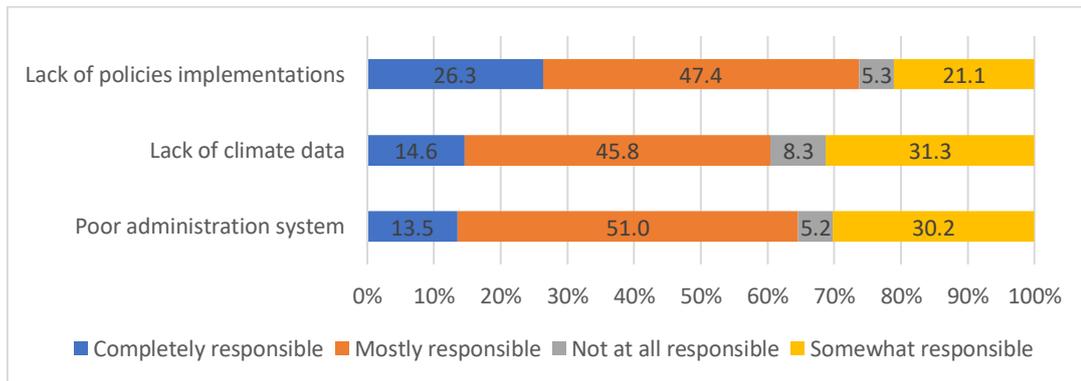
**Figure 29: What is the most efficient way to raise climate finance from international community?**

One of the major reasons behind low implementation of green initiatives is the lack of fiscal stimulus. The availability of financing from both domestic as well as international resources will make it easier. The questionnaire indicates that 45.3% of the respondents agreed that climate financing is extremely important for tackling climatic issues in Pakistan while 29.5% of total respondent marked it as a very important as shown in fig 30.



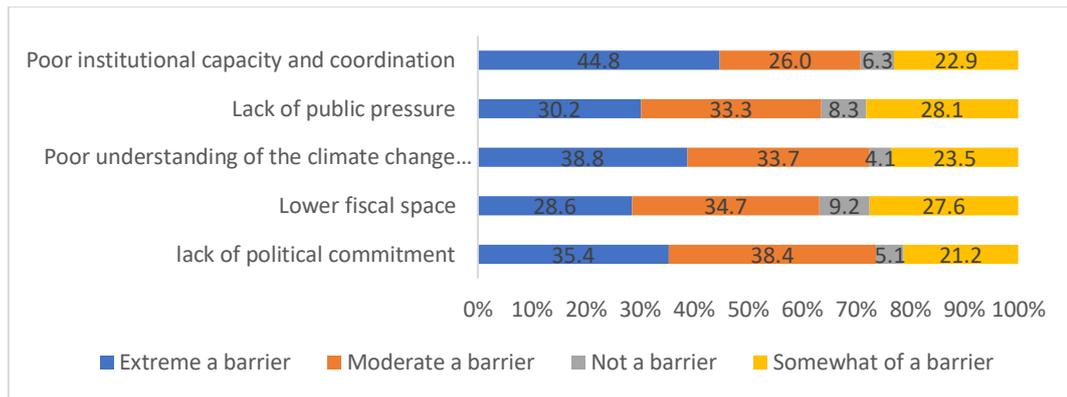
**Figure 30: How important is climate finance for Pakistan?**

Similarly, besides low fiscal stimulus, there is also some other issues which keeps the government away from taking green initiatives. According to the respondents, 26.3% of them indicated that lack of policy implementation could be the major reason behind this. Similarly, they are also in the favor of lack of climate data and poor administration system as shown in fig 31 below. Accordingly, Pakistan has took various policy initiatives at domestic level but the implication of that polices are missing which is a major reason behind less initiatives.



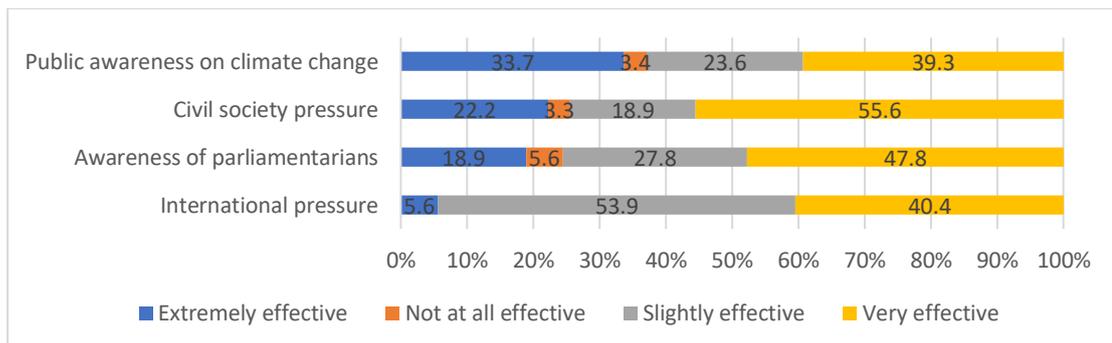
**Figure 31: What could be the major reason, other than fiscal space issues, behind low public climate financing?**

Besides financing issues, implementing climate action plans is also a difficult task. Pakistan is yet fail to implement its climate action plans although it has designed various polices. According to the survey, roughly around 44.8% the respondents shows that poor institutional capacity and coordination could be the major reason behind this while other thinks that poor understanding of climate change impact also a reason as shown in fig 32.



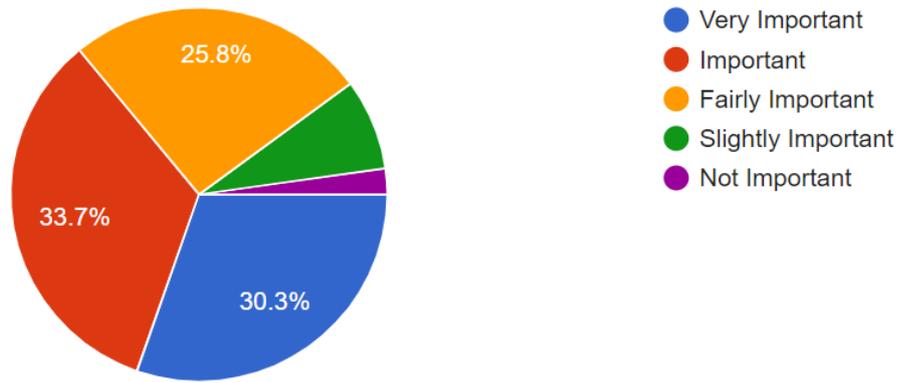
**Figure 32: What do you think is the topmost barrier to implement climate action plan in Pakistan?**

As, the importance of climate financing has been highlighted. But what prevention needs to be taken to enhance financing and how to improve the climate informed fiscal planning? For this, few measures have been highlighted including public and parliamentary awareness, international pressure and the civil society pressure. All these are highly contributing for achieving the target. As per the questionnaire, the civil society pressure is the efficient way to enhance this as shown in fig 33.



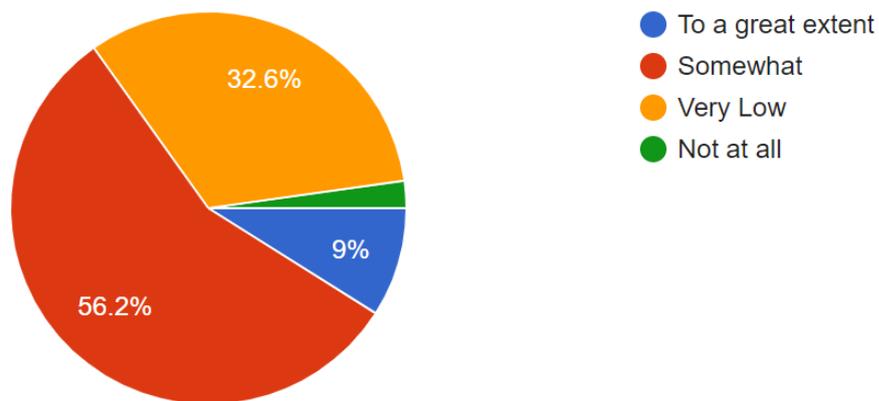
**Figure 33: What you think can be most effective to improve “Climate Informed Fiscal Planning” in Pakistan?**

Besides the measures taken by federal government, it is the responsibility of provincial governments to address the climate issues at provincial as well as at district level. Based on the questionnaire, the majority of the respondents highlighted the importance of provincial sector for generating climate financing shown in fig 34. Measures at provincial and district level will make it easier to highlight the actual issues and their intensity.



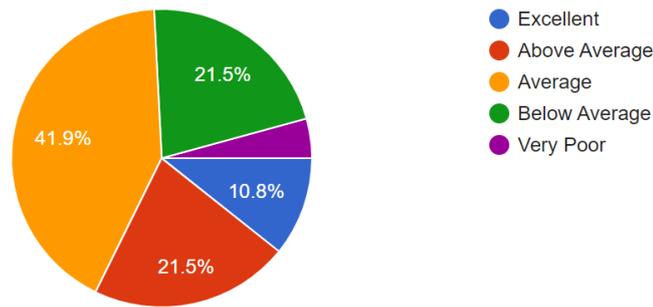
**Figure 34: How important is the role of provincial government in promoting “Climate Informed Fiscal Planning”?**

Besides fiscal measures, there is also a prominent role monetary measures in order to tackle climate issues especially green financing. The current monetary condition of Pakistan is not so good as it is not involving the green initiatives. According to the responses, around 56.2% of the respondents show that current monetary condition is little allow green financing while 32.6% shows very low opportunities as shown in the fig 35.



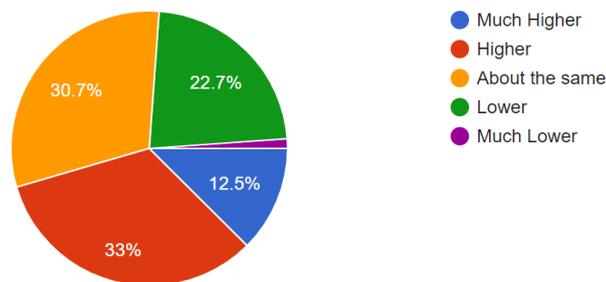
**Figure 35: Do you think the current monetary condition allows green investment in the economy?**

Central bank itself can took initiatives to ensure climate financing. According to the questionnaire, 41.9% of the responses show that the intervention of state bank for climate finance is on average. And there is a potential to take participation in such initiatives.



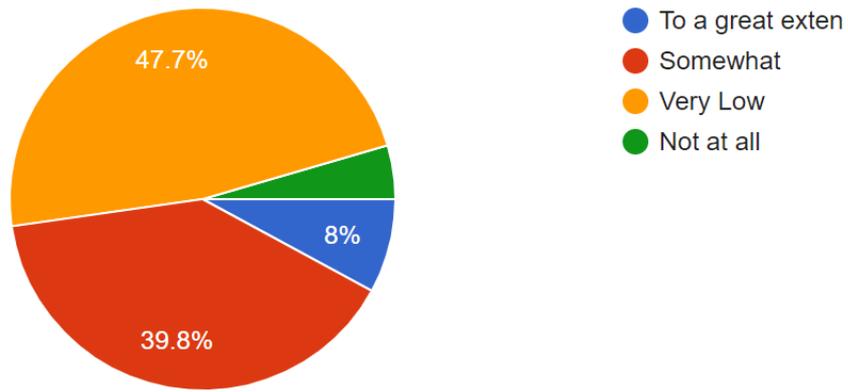
**Figure 36: How do you rate central banking in Pakistan helping finance climate action through its different policies?**

The state bank has much potential in rising the climate funding. 33% of the respondents shows that the potential is high while 12.5% shows a very high potential as shown in the fig 37.



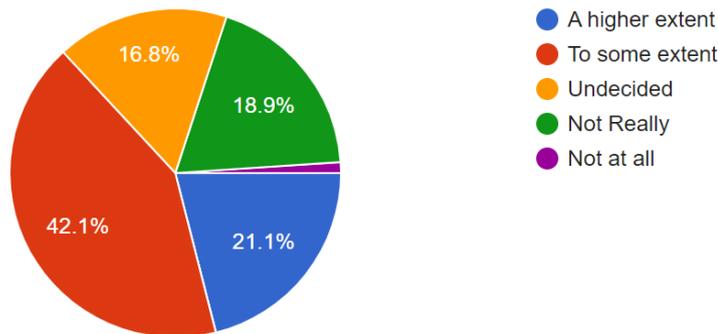
**Figure 37: What potential do you see State Bank of Pakistan (SBP) has to help raise climate finance**

Now how government can boost its monetary condition and how state bank can intervene to enhance this. One prominent option is engaging the commercial banks. But now question arises that how much commercial banks are willing to take participation. Commercial banks have very little willingness to do so according to 47.7% of the respondents while according to 39.8% respondents, they have little willingness to take participation as shown in the fig 38. The reason is low incentives. Giving incentives to commercial banks will develop their interests towards green projects.



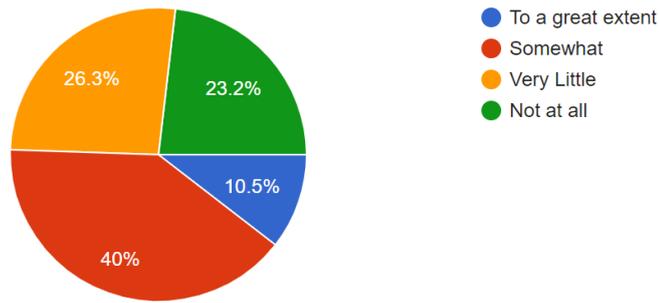
**Figure 38: Do you think commercial banks are willing to supply finance to green projects?**

As the contribution of both public and private sector was low due to various reasons. But the outbreak of COVID-19 pandemic has also reduced this contribution because of poor socio-economic condition. The majority of the responses from the questionnaire shows that there was somewhat effect of COVID-19 while few of them think that the impact of COVID-19 was on to a great extent.



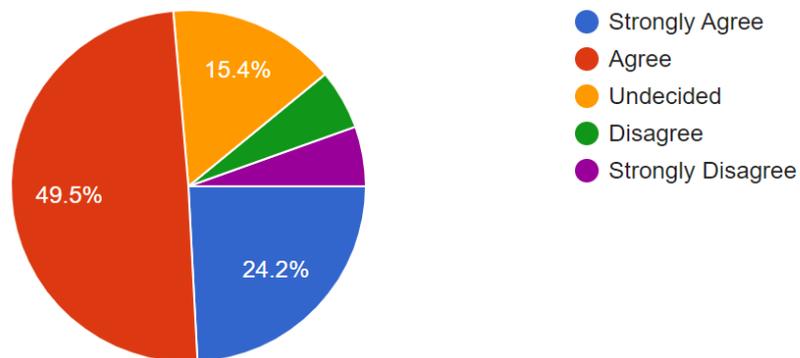
**Figure 39: Do you think, the outbreak of COVID-19 will make it difficult for both public as well as private sector to contributes towards climate financing?**

After 18th amendment does there is any improvement in climate financing? Abundant number of responses show that there is little changes in the climate financing after 18th amendment as shown in fig 40 below.



**Figure 40: Do you think climate finance has improved after 18th amendment?**

In the current era, the global economies are moving towards inclusive and sustainable development. It is possible only if we include climate change and development together. Neglecting climate change from development agenda will take the world into worse scenario. According to the survey, around 49.5% of the respondents agreed that separating climate actions from development will leads towards failure and worse economic condition as shown in fig 41.



**Figure 41: Do you think development strategies will likely fail, without integrating climate action into long term budget planning?**

## Chapter 6

### Conclusion and Recommendations

It is consensus that climate change can have severely effects on countries economy. Especially developing and least developing countries are the easiest victims of these environmental damages. Economic loss of such countries led them towards unemployment, health problems and poverty elevation. Pakistan currently has limited fiscal space and is not able to finance climate issues in the country. The annual need is roughly around \$7 - \$14 billion per annum for climatic issues and instead of this Pakistan is receiving around \$500 million. This situation is showing how much we are lacking behind in generating funds from our domestic resource and receiving funds from international community. Now the question arises that what could be the possible options Pakistan has to cover this excess need?

This study highlights the options and channels through which Pakistan can generate more climate funding. For this, the data were collected from the online questionnaire. The results show that deforestation, excess usage of fuel and GHG emissions remains the major reasons of climate change in Pakistan. And government is taking this issue seriously as many green initiatives has been taken by government. Due to the lack of fiscal stimulus, the financing capacity of Pakistan is below average which needs improvement. According to the questionnaire, currently NGOs and public sector is contributing major share into the climate financing in Pakistan. The government has the option to increase green fundings through imposing carbon taxes, engaging the private sector and issue green bonds. According to 32.65 of the respondents, imposing carbon taxes can help to a great extent while 30.5% think that engaging private sector will assist a lot for collecting more fundings. Similarly, debt swap is also an efficient tool for green recovery as 42% of the respondents consider this very effective.

Similarly, engaging private sector will also assist government in generating more financing. The current engagement of private sector is limited due to lack of interest and incentives. According to the questionnaire, 41.1% of the respondents think that this engagement is below their potential. And how can we attain the maximum potential. The responses indicates that public private partnerships and risk-free investment could be the efficient options.

Currently, Pakistan is getting a major share of climate fundings form international

resources. According to the 65.6% of the respondents, Pakistan is getting major funding from international climate organizations. Similarly, Pakistan is also getting fundings from donor agencies and developed countries according to the 46.9% and 34.4% of the respondents respectively. For further increase these fundings Pakistan can engage them through bilateral agreements, by tapping green energy markets and by issuing Green Sukuk and euro bonds.

Besides low fundings, there are also few reasons at due which also causing less implementation of green projects. Around 51% of the respondents consider poor administration as a major reason while 47.4% and 45.8% of the respondents consider these as the top barriers behind low implementation level. Beside this, the role of provincial government cannot be neglect. Around 64% of the respondents consider it important for handling climate issues.

Monetary policy by state bank of Pakistan can play important role in financing the climate action. Currently, the monetary condition of the country is no allowing green investment. It is due to the less intervention of State Bank. The responses (41%) shows that the help from state bank to generate funding is on average while 21.5% enlisted this above average. As, the State Bank has potential to increase climate fundings and its intervention can also improve the monetary condition according to the results. State bank can take initiatives of green banking like emerging economies doing and can provide incentives to other commercial banks which consider as the most efficient method to raise finance from domestic level.

Climate budging must be adopted by government as it is very important for sustainable growth. Pakistan is one of the most vulnerable state to climate change and huge amount required for climate action but unfortunately the amount allocation for climate action in federal budget is much less than required and on other hand it is much easiest way to cut climate budget when the level of external debt increase. therefor climate budgeting required to quantify climate finance allocations, expenses and impacts across the financial mechanism, in climate budgeting there should be significant allocation for climate action and there should be discussion on climate related policies integration in other development policies for sustainable development

This study shows that climate change is the real threat to the existence of human being. For moving towards low carbon economy, we have to take mitigation and adaptative

measures as soon as possible. For this huge amount required. According to burden sharing technique and in different multilateral, bilateral agreements and developed countries are the main responsible to finance the climate action. specially to developing countries with more vulnerability and low economic capacity there is need of technical, technological and financial assistance from developed countries.

## **Policy Recommendations**

On the basis of this study, we have suggested few of the recommendations, Finally, we derived these main policy options.

- State Bank of Pakistan must incentivize commercial banking sector for green finance as Global green bond market has grown to roughly \$200 billion in 2019, from nothing five years ago. As we have discussed Private sector must be involved in order to reach out to public. The cause of green revolution is sellable as we can see growth of TESLA.
  - Government must adopt Climate-Informed Fiscal planning. This means that government must integrate climate change adaptation and mitigation policies in its macro-fiscal policies including planning and development, budgeting, and public investment policies. Finland offers a good case study in this regard.
  - Government can issue Green Sukuk and Euro bonds for green investment. Many countries in the world are doing it. Dubai offers and excellent example. In Pakistan, WAPDA gas proposed to issue long-term dollar-denominated green bonds of worth up to \$500 million by March 2020.
  - Engagement of local people in decision making and implementation about finance. There is no concept of localization in decision making about climate finance. Powerful entities solely decided and imposed on local community without knowing the degree of vulnerability there, system of transparency and accountability and state of economy there. For example, \$93.7 billion will be needed in year 2020 to least developed countries (LDC) to implement their national determined contributions (NDCs). Only 18% of global climate finance reached to least developed countries and less than 10% finance from dedicated climate funds gets to the local level, where climate action is required (Soanes 2020). Therefore, concept

of localization is required to transparency, accountability and in smooth flow of climate funds.

- Public private partnership (P3A) in development projects. Additionally, it is important to note that there exists a bulk of private sector investment opportunities in Pakistan. SDGs related to climate action, for example goal 6 (clean water and sanitation) and goal 7 (affordable and clean energy) alone have a potential of bringing in \$4 billion and \$44.7 billion into Pakistan till 2030, respectively (Standard Chartered, 2020). However, there has been a distinct failure to tap into these opportunities. This is because Pakistan's investment climate has been far from favourable over the past decade, caused by many factors, from threat of terrorism to persistent political and macroeconomic instability, corruption, anti-business tax and other regulatory policies (Waheed & Ghumman , 2019).
- If the government wishes to unlock private sector investment for climate change, it must create an investment-friendly environment in the country and boost investor confidence by addressing many of the above-mentioned challenges. It must also invest in enhancing its capacity to engage with the private sector, at both a national and provincial level. The sector must be approached as a strategic partner in achieving climate action, by making it an active stakeholder in the country's medium to long term national climate priorities. And finally, the government must advance the development of the private sector through the provision of appropriate policy and support (UNDP, 2012).
- Key environmental vulnerability factors have been identified but the link between environmental damage and its impact on socio economic growth needs to be made clearer. Number of economists think that reduction in environmental degradation and greenhouse gases emissions means reduction in the economic growth. But reality is that those countries with high economic growth are more capable to finance their climate action then the countries with low fiscal space. Beckerman (1992) strongly submit that "there is clear evidence that, although economic growth usually leads to environmental deterioration in the early stages of the process, in the end the best – and probably the only – way to attain a decent environment in

most countries is to become rich”. So, there is need to be clear understanding of relationship between environmental degradation and sustainable economic growth.

- There is no systematic mechanism of tracking budget allocation for both federal and provincial level, no system available of tracking international finance and there is no systematic efforts to track and quantify private sector climate finance in Pakistan. government of Pakistan have to establish relevant strong and independent institution to overcome these issues.

### **Capacity building for using modern external financed instruments, such as debt swaps.**

- International entities are very important sources to financed against climate change which can provide technical and technological assistance. Getting finance through international authorities there is a necessity to build the country’s capacity in effectively securing and implementing various financial instruments. Like issuing of green bonds, climate informed fiscal planning, formation of separate, dedicated, and independent climate change related institution and green banking where State Bank of Pakistan can incentivize commercial banking. Debt Swaps, for instance, are gaining popularity in the country. As the government closes in on a number of Debt Swap agreements this year, a couple of challenges are mentioned above keynote on debt swap, need to be addressed to ensure their success.
- Systemic corruption is a serious problem in Pakistan, which ranked 124<sup>th</sup> out of 180 countries in the 2020 Corruption Perceptions Index **Invalid source specified..** The country encounters regular instances of misappropriation of public funds, which have weakened the public’s confidence in the government’s ability to use public funds for social welfare, transparently and equitably. Widespread corruption has hit the poor the hardest, as individuals seeking short term gains place entire communities and populations groups at risk. In light of this, the GOP must ensure:
- The use of multi-stakeholder accountability mechanisms as tools to monitor the accountability and transparency of climate action and finance. This will

help prevent the abuse of power in the planning process, that can be used to prioritize certain projects and sectors over others (UNDP, 2015, Palmer, et al., 2014).

- The set-up of independent complaint mechanisms and strengthening the role of the civil society as a ‘watch-dog’ to reduce the corruption risks of climate projects and programmes (Ibid). The civil society work hand-in-hand with local communities and the general public at large to hold elected officials and the government to account.
- Inclusive climate governance, by including those who do not possess the political influence or power to have their interests adequately safeguarded or prioritised e.g. small-scale farmers, informal workers, those employed in industries/sectors with dire working conditions etc. These stakeholders must be identified and prioritised.

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