

**REDD+ IN PROVINCE KHYBER PAKHTUNKHWA:
INSTITUTIONAL ARRANGEMENTS AND CHALLENGES**



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2016

CERTIFICATE


This is to certify that this thesis entitled: "*REDD+ in Province Khyber Pakhtunkhwa: Institutional Arrangement and Challenges*" submitted by Syed Qasim Shah is accepted in its present form by the Department of Development Studies, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Development Studies.

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Acronyms:

ANNEX 1: Developed countries

CCIF: Climate Change Investment Fund

CDM: Clean Development Mechanism

CEF: Centralized Environmental Facility

EUETS: European Union Emission Trading System

FCPF: Forest Carbon Partnership Facility

FIP: Forest Investment Program

GCM: General Circulation Model

GHG: Green House Gases

GLOF: Glacial Lake Outburst Floods

IPCC: Intergovernmental panel on Climate Change

KP: Khyber PakhtunKhwa

MRV: Monitoring Reporting Verification

NON ANNEX 1: Developing countries

REDD+: Reducing Emission through Deforestation and Forest Degradation

R-PP: Readiness Preparation Proposal

SBASTA: Subsidiary Body for Scientific and Technological Advices

UNFCCC: United Nations framework convention on climate change

WFP: World Food Programme

WWF: World Wildlife Fund

Acknowledgement

First of all I would like to thank Almighty Allah for giving me the strength to complete this task.

Secondly, I would like to pay my utmost gratitude to my supervisor, Dr. Anwar Hussain who is Assistant Professor at Pakistan Institute of Development Economics, ensured that I completed this task on time and provided me with the best of his knowledge and guidance. Thank you Sir!
This task would not have been possible without your endless support!

I would also like to thank my respondents, who took out the time from their busy schedules to accommodate my requests and provided me with the required information to complete my research.

Finally, I would like to thank my parents, family and my friends who always believed in me and kept me motivated through their endless prayers and support!

A special thank you to Shakeel Hayat and Fahd Zulfiqar, for bearing with me throughout this journey.

Thank you!

Abstract

Today we are witnessing the detrimental impact of climate change and global warming, which are manifesting throughout the world, REDD+ has emerged as a means of combating the impacts of climate change by reducing the level of greenhouse gases in the atmosphere. The Government of Khyber Pakhtunkhwa initiated the REDD+ project on a provincial level in Pakistan. This research analyzes the institutional arrangements as well as the challenges faced by the Government of Khyber Pakhtunkhwa as it implements these projects in the province. For this purpose, this research has employed a qualitative approach and has collected the information through interviewing concerned government officials, academicians and NGOs. This research found that the primary challenge that the Province of Khyber Pakhtunkhwa is facing in the implementation of REDD+ is the lack of cooperation from the Federal Government which contributes to the deficit of knowledge regarding the project and impedes the process of capacity building within the related institutions. REDD+ throughout the world works through and is implemented by the Federal Government. Hence, it is essential that the local, provincial and federal levels are synced in the process of capacity building, promoting and implementing the REDD+ projects. So it is the need of the hour to have complete devolution of power and authority under the 18th amendment needs to occur in order to activate the concerned departments on the provincial level.

Keywords: Climate Change, REDD+, Sustainable Development

Chapter I

INTRODUCTION

1.1 Background of the Study

Climate change has evolved into one of the most popular and vital debates in the international community nowadays. Global warming, rise in sea levels, melting glaciers and all other phenomena's related to global warming are threatening the world at alarming rate. On average the global temperature rose by a 0.6 to 1 degree Celsius by the 20th century (CEF, 2015). The increase in emission of greenhouse gases has elevated the temperature of the globe which is causing many problems worldwide. The influencing factors of these increasing emissions include both anthropogenic and natural. The rapid increase in the rate of these gases in the atmosphere is due to rapid industrialization, development and economic growth by countries all over the globe. According to World Food Program (WFP) by 2015, the amount of people who were impacted by climate change and its disasters has reached a staggering 375 million per annum (WFP, 2015). In short industrialization in countries is the major cause of climate change.

Increase in population has increased the dependence of people on the forests and agriculture. People generate their livelihood and get food, shelter and many other natural resources from forests. This is creating stress on the natural forests around globe. People are using forests and exploiting them to meet their need which is disturbing the natural cycle of Mother Nature, as a result the Green House Gases are increasing in the atmosphere creating problems and making population vulnerable to disasters. In the past few decades rapid industrialization and carbon emission has impacted increase in sea level rise, glacial lake outburst floods, flash floods, high temperatures etc which affected the overall globe and mankind (Schaub, 2012).

In order to cope up the effects of climate change a new concept is introduced which aims to reduce the carbon emission through forests known as reducing emission through deforestation and forest degradation (REDD+). This concept aims to reduce carbon emission through expansion and conservation of forests and storage of carbon stocks plus including the element of sustainability for conservation of forests. The forests are considered to be a good source of carbon sink. This initiative has been taken by many developing countries.

To cope up with the effects of climate change various models are introduced by the United Nation Framework for Convention on Climate Change. They highlighted the impacts of carbon emission and ideas improvised to reduce carbon emission in the world. Clean Development Mechanism (CDM) in article 12 of UNFCCC report was initially introduced as a solution to the problem. The project aimed to reduce carbon emission in developing countries by implementation of green projects. Many countries held a successful implementation while countries like Pakistan did not achieve any mentionable success. Later on in the year 2005, the idea of RED was introduced to reduce emission through deforestation which revolved into REDD and then REDD+. REDD+ illustrates the idea to reduce emission through deforestation, forest degradation and provide financial incentives to developing countries for storing carbon in forests. It was further directed to invest in low carbon activities that would result in sustainable management of forests (Franck & Ambrosi, 2007).

Most REDD+ projects in the developing world are facing the problem of the varying interests of the national and local level parties. On a national level, the government works to incorporate co-benefits, strategies to impact carbon levels and policies which seek to ensure they receive financial compensation for the initiative. Local levels are more concerned with the benefits they receive in return i.e. if they agree to not make use of the forest and its resources to sustain their

livelihood, and then are they receiving a healthy compensation in return(Visseren-Hamakers, et al., 2012).

According to the World Resources Institute, the loss of forests annually contributes to global greenhouse gas emissions by 12 to 17 % (World Resources Institute, 2015). Around 15 percent of the carbon released in the environment is because of deforestation and changing the manner of land use (CEF, 2015). REDD+ aimed to reduce and maintain carbon emission to 2 degree Celsius by promoting forestation, improvement of carbon stocks and forest degradation. This was to be attained by providing financial incentives to local communities which are dependent on forests (Brown, Seymour, & Peskett, 2008).

To achieve this goal there is a need of reforms on a policy level as well as building of new institutions for a successful prospect of the project. However, a country like Pakistan which was unable to achieve these goals of Clean Development Mechanism (CDM) is facing many issues in implementation of REDD+ projects. There are 6 major dimensions where a country faces concerns for the implementation of REDD+ project (Visseren-Hamakers, et al., 2012).

The issues that need consideration are: scope and scale of REDD+, methodological and governance issues, long term financing mechanism, potential role of REDD+ and phased Approach. Pakistan as a developing country has promised to adopt and implement the concept of REDD+ but it requires efforts and reforms on policy level as well as on ground levels. The Khyber Pukhtun Khwa Government (province of Pakistan) has signed a Bonn agreement to reduce carbon emission to zero percent. In order to achieve this goal they have taken initiative of planting one billion trees in KP. This project is known as billion tree tsunami a forestation

project which in reality is REDD+. The project covers the areas of Abbotabad, Mansehra, and Swat (EnvInfo, 2012)

1.2 Statement of the Problem

The rapid increase in population has a devastating effect on the natural resources. Increase in population has increased the dependence of people on the forests and agriculture. People generate their livelihood and get food, shelter and many other resources from forests. This is creating stress on the natural forests around globe. Deforestation is a massive issue for Pakistan; from 1990 to 2005, Pakistan's annual forest depletion rate was 2.1 %. KPK and Northern Areas faced the highest deforestation rate for coniferous trees. Moreover, experts state that state owned forests alone bear a loss of billions of rupees annually (Dawn, 2009). In order to keep up with and manage the impacts of climate change, a new idea is established which aims to reduce the carbon emission through forests known as reducing emission through deforestation and forest degradation (REDD+). This concept aims to reduce carbon through expansion and conservation of forests and storage of carbon stocks plus including the element of sustainability for conservation of forests. The forests are considered to be a good source of carbon sink. This initiative has been taken by many developing countries. Pakistan on the provincial level has taken the initiative to implement the project (EnvInfo, 2012).

However, when it comes to the implementation, most REDD+ projects in the developing world are faced with a major problem: the varying interests of the national and local level parties. On a national level, the government works to incorporate co-benefits, strategies to impact carbon levels and policies which seek to ensure they receive financial compensation for the initiative. Local levels are more concerned with the benefits they receive in return i.e. if they agree to not

make use of the forest and its resources to sustain their livelihood, and then they are receiving a healthy compensation in return? Therefore, REDD+ becomes not only a design but also a policy framework.

Drawing from the practical gap established above, this research primarily focuses on two things. Firstly, it studies the extent to which this gap exists in the chosen REDD+ project in Pakistan. Secondly, it analyzes the ways in which the designers and policy makers can overcome this gap during the implementation stage of the project.

1.3 Significance of the Study

Climate change is a reality which cannot be ignored or denied. In the past few decades global warming and the rising temperatures has shown that the world is heading towards a massive environmental catastrophe. If the carbon emission is not controlled in the atmosphere the world will have to face the harmful consequences of climate change and global warming. In this situation the developed countries took the initiative to control the negative impacts and took green projects seriously. Carbon disposal management and REDD+ are top and upcoming green projects. It took about 21 years to take all the countries on board and make a binding agreement under which the countries will help each other financially and technically to conserve the nature and reduce their emissions. In order to pursue the cause, the developed countries offer assistance to developing countries for the execution of REDD+ projects to lessen emissions through forest degradation and deforestation. Developing countries like Pakistan on the provincial level have signed the Bonn challenge to reduce its carbon emission to 0% (Khan, 2015). For this purpose the REDD+ project is implemented in the province. However this project is facing many issues

in the implementation phase. Governance is considered to be the most important issue which covers the scope and scale of the project.

The significance of the study lies, firstly, in the fact that no prior work has been done on REDD+ from this aspect in Pakistan. Hence it is the first of its kind; exploring existing institutional arrangements of REDD+ in KPK, initiatives of the current government to achieve the objectives of the REDD + and major challenges these initiatives face including implementation, scope and scale, financing, governance, methodological issues, phased approach and potential role of REDD+.

1.4 Research Questions

What are the institutional arrangements and challenges faced by KP government in the implementation of REDD+ project?

- What are the institutional arrangements for REDD+ in KP?
- What are the initiatives of the current government for REDD+ in KP?
- What are the challenges faced by KP government in implementation of the REDD+ project?

1.5 Research Objectives

The specific objectives of this study are:

- To evaluate the institutional arrangements for REDD+ in KP.
- To highlight the initiatives of the current government for REDD+ in KP.
- To assess the challenges in the way of REDD+ in KP.

Chapter II

LITERATURE REVIEW

The following chapter consists of the review of literature conducted for the purpose of this research. The Literature is divided thematically into three major facets of REDD+. Firstly it discusses REDD+ in general: its evolution, benefits, problems and gaps in REDD+. Secondly it discusses REDD+ in relation of climate change. Finally, it looks into REDD+ from the perspective of sustainable development.

2.1 REDD+

Climate change and global warming has had devastating impacts on the world in past decades. Increase of Greenhouse Gas emissions in atmosphere are causing changes to the environment. Therefore to reduce the impact of Greenhouse gasses international panel on climate change introduced different programs to conserve environment and promote development in green manner. Carbon disposal management was the first step of this program which was achieved by many developing countries. Later on REDD+, reducing emission through deforestation and forest degradation was launched to reduce the amount of greenhouse gases in the environment. This mechanism is defined as reducing emissions from deforestation and forest degradation through conservation, sustainable administration of forests, and improvement of forest carbon stocks (UNFCCC, 2009). This step is designed to use market incentives to mitigate deforestation and forest degradation and exploitation of forest services. REDD+ insures to store carbon through forestation and stop it from being released in atmosphere (Park, et al., 2013). Similarly different authors and researchers have defined REDD+ as the solution to mitigate the impact of GHG in atmosphere. REDD+ is defined as a set of policies and activities for developing

countries to slow down the rate of deforestation and forest degradation and increase the carbon stocks (Palmer, 2010). The UNFCCC and developed countries encourages developing countries to contribute in mitigation actions in forest sector by undertaking different activities according to their capabilities. These activities are defined as “(a) *reducing emissions from deforestation* (b) *reducing emission from forest degradation*(c) *conservation of forest carbon stocks* (d) *sustainable management of forests* (e) *enhancement of forest carbon stocks*”(Olander, et al., 2012).

The report released by Intergovernmental Panel on Climate Change (IPCC)’s fourth evaluation report 17.4 percent of worlds GHG emissions are emitted from land use change. This also includes forestry. The emissions can be reduced through designing strategies related to land usage and change in land usage. The forests are considered to be good source of carbon sequestration (Davidson, et al., 2007). This report was not the first one to recognize the importance of forests. 10 years prior to this report the Kyoto protocol listed forest as the important element of sinking carbon. In Kyoto Protocol actions were decided to be taken to reduce anthropogenic emissions. Therefore the limitations were imposed on Afforestation, reforestation and deforestation in 1990. In order to meet the commitment, annex 1 country were to develop clean development mechanism for Afforestation/reforestation and transfer it to non-annex 1 countries and use the amount of GHG reduction to meet their target under the protocol (Park, et al., 2013).The conditions for approval of these projects were very strict. Out of 2597 projects only 19 projects were registered through CDM in December 2010 since its initiation in 2006 (Norad, 2011).the discussion on reducing emission continued and the REDD came in existence. REDD is known as reducing emission through deforestation and forest degradation. In

order to use market incentives to mitigate deforestation and exploitation of forest services, REDD aims to store carbon in forest and stop carbon from exploiting environment.

The discussion of REDD at international level was initiated when Costa Rica and Papua New Guinea supported by eight parties promoted REDD as a formal agenda in conference of party COP(11) of UNFCCC in 2005. Later on the Subsidiary Body for Scientific and Technological Advices (SBSTA) of UNFCCC selected as a key issue for discussion on post Kyoto regime after 2012. The role of REDD was limited to deforestation and forest degradation later on the PLUS was added to concept which included responsibility of conservation, sustainable administration of forests, and improvement of forest carbon stocks (UNFCCC, 2009). REDD was warmly welcomed by the international community. It was a scheme to combat climate change among developed and developing countries. It was formally proposed in COP11, later on in Copenhagen accord COP15 defined the requirement to provide incentives for REDD by facilitating the mobilization of financial resources from the developed countries. This accord called for establishment of immediate mechanism to finance REDD activities therefore six countries pledge total amount of USD 3.5 billion to start financing mechanism of REDD. 58 countries formed REDD partnership at Oslo climate and forest conference in May 2010. In this conference six more countries provided USD 500 million and by 2010 USD 4 million were more added to finance REDD activities (Australian Government, 2012). In Cancun agreement COP 16 the efforts were adopted and developed countries formally committed to provide resources of USD 30 billion for period of 2010-2012 as a fast start financing to support the cause of mitigating climate change through REDD. This agreement clearly defined the scope of REDD+ and requested developing countries to design strategies and national plans for forest reference levels,

monitoring system, and a system which will provide information regarding safe guards that they are being addressed during implementation or not (UNFCCC, 2009).

International negotiations on expanding the size of REDD activities and its importance was yet unquestionable. Some developing countries are participating and supporting implementation of REDD activities because of international negotiations. Till 2009 79 REDD readiness activities and 100 demonstration activities were implemented in 40 developing countries around the globe (Cerbu, et al., 2010). REDD demonstration and capacity building programs in various developing countries are driven by international initiatives known as forest partnership facility of World bank, UN-REDD program jointly led by food and agriculture organization (FAO), forest investment program (FIP) of climate change investment funds, united nations development program and united nations environment program. Developed countries are supporting multi-lateral schemes to design and implement REDD+ activities in developing countries. (Park, et al., 2013).

The provision of REDD+ incentives, political and institutional challenges in Bali conference of UNFCCC in 2007 has gained wide spread acceptance in international policy. REDD is followed by the “+” sign, which indicates the inclusion of conservation, management of carbon stocks, forest certification, and improvement of forest carbon stocks by the means of reforestation and deforestation (Clements, 2010). This is so important that if we desire to steer clear of the worst consequences of climate change then there is serious need to work on REDD+ (Eliasch, 2008).

Lederer (2011) in his article argues that international community has shifted from CDM to REDD+ but the question is whether we know how to set up effective and lawful carbon governance? He argues that in the international community, politically significant groups sustain

the enclosure of land use change and in particular the avoided deforestation and forest degradation. Countries like Costa Rica and Papua Guinea proposed idea that this mechanism of REDD should take in some reimbursement scheme for developing countries and it must be part of the post 2012 climate protection structural design. This idea was acknowledged in cop11 and given much importance. These two small countries took a very good imitative and gained momentum. Later on major actors like rainforest states, groups of islands and G77, China also included forestry issue and it became an element of the Bali Action Plan. This idea was supposed to be included in the New Climate Protection Treaty in Copenhagen in 2009. IPCC stressed on this idea, the European Union Emission Trading System (EUETS) proposed local and regional trading plans which aimed to look for land use change practices in sustainable manner and considered forestry as offset for climate change. Countries like Norway with little experience has supported the cause and its financial commitments increases and shows the effectiveness of the scheme, on the other hand Norway itself is dependent upon fossil fuel therefore its commitments and engagements are questionable (Lederer, 2011).

There is a need of interdisciplinary research to address issues regarding the challenges faced by REDD+ because REDD+ has gained much political and scientific concentration when the matter was initially made the agenda of UNFCCC in 2005. The initiative seemed to add to climate change mitigation by providing motives for developing countries to continue and keep their forests standing as deforestation is the key grounds of carbon emission. Scope of REDD has expanded therefore encompassing deforestation and forest degradation, conservation, sustainable management of forests and enhancement of forests carbon stocks in developing countries is jointly known as REDD+. REDD+ is being discussed; many bilateral and multilateral schemes are already being provided to developing countries and assisted to prepare them for REDD+.

Developing countries are designing national REDD strategies through stakeholders and pilot projects. He argues that if REDD+ has to work optimally it should be linked with other policies. Because it has complexity issues like payments from REDD+ are not enough to compete with returns of land uses and payments of different eco system. Therefore links between climate change and forest governance is much more important. REDD+ as an instrument for climate change mitigation must be linked to climate change adaptation efforts because forests are important in terms of mitigation and adaptation of climate change (Visseren-Hamakers, et al., 2012).

2.1.1 Evolution of REDD+

The major concern of REDD+ is finance. The scale of finance for REDD+ projects is significant. Yearly donor support for biodiversity and conservation plans in 2008 was 1.35 USD billion which is 1 percent of the total aid for developing countries (Clements, 2010). The financial need for REDD+ during 2010-2015 was estimated about EUR 15-25 billion. In May 2010 the developed countries in Oslo made an initial pledge of providing USD 4 billion for 2010-2012. The article argues that REDD+ is a performance based program which provides incentives to the stakeholders. It is a full package and a program with many incentives which is comparatively much more improved than previous programs. Its impacts are easy to be assessed. The important thing here is to sustain the incentives of REDD+ on the supposition that short term project grants can lead us to long term results. REDD+ is an ambitious program (Clements, 2010).

The REDD+ system is based on a leadership system. Anderson and Agerwala (2002) in his article argue that there are three types of leadership systems i.e. intellectual leadership, instrumental leadership and directional leadership (Andresen & Agrawala, 2002). Intellectual

leadership is exerted by individuals with intellectual capita and thinking capacity that shapes the perspectives of those people who participate in institutional bargaining for making regimes (Young, 1991). This type of leadership is often used for international negotiations. Instrumental leadership is exercised by those who seek the means, by using their status and skills to achieve end and persuade others about the merits of a problem (Underdal, 1994). Directional leadership refers to the way an issue is dealt with. It is implemented by swaying other parties. Directional leadership provides motivation by moving first and shows the supremacy of particular solution options (Skodvin & Andresen, 2006). Mi Sun Park argues that this type of leadership is found in REDD+ regime (Park, Choi, & Youn, 2013).

REDD+ emerged as the outcome of international negotiations on global climate change at UNFCCC. Two scientific publications sets the agenda of REDD+ one is by sir Nicolas sterns the economics of climate change, which identified deforestation as a cause of climate change and he argues that it is highly cost effective way to reduce GHG (Stern, 2007). Second agenda is mitigation of climate change. The construction of REDD+ mechanism is an ongoing process. UN REDD Programme and Forest Carbon Partnership Facility (FCPF) of World Bank, have contributed to the implementing future of REDD mechanism in annex 1 countries based on their technical capacity and coalition with actors (Johns, et al., 2008). Initiatives taken by developed countries as pilot projects functions as a means to analyze the situation and enhances their capacity to implement REDD+ projects.

Young (1991) argues that developed countries took part in climate change negotiations and provided resources for REDD readiness and projects to developing countries under climate regime. Their contribution varies depending on their interests and resources. Allocation of resources such as finance, technology and knowledge leads to difference in power to influence

the REDD mechanism. The resource defines the power position of any country in bargaining leverages among stakeholders in processes of institutional bargaining (Young, 1991).

A country's role and contribution in establishing international REDD+ scheme depends on its perspective. The perspective means the scope and emphasis of a country on REDD+ activities. That is because each country has its own emphasis in REDD+ depending on national interests (Park, et al., 2013).

The concept of REDD+ seems very effective as its objectives are quite clear. Rosendal and Anderson (2011) argue that it is important to focus on REDD objectives which aims to reduce carbon emission but bio diversity conservation should be included in the REDD+ objectives, as it is very important element of nature. They argue that enhancing resilience of ecosystem and maintaining bio diversity are the key elements of climate change mitigation and adaptation agendas (Rosendal & Andresen, 2011).

There are many concerns regarding implementation of REDD+ and its impact of local communities. Tenure rights are generally more discussed than other issues. REDD+ has divided community's obstacles into three groups: political, technical and conceptual (Brown, et al., 2008). Political hurdles point to the rights, resources and advantages of the local community. They entail actors who contest reforms because they believe they will lose out if the local community is empowered. Simply they want to gain from reforms. Loggers, mining or petroleum companies' wants resource rights, bureaucrats seek power to increase their share by controlling the resources, community leaders who seek out unequal share of benefits (Larson, 2010).

It is important to know about the drivers of deforestation if we want to implement REDD+ projects. In 2009 Copenhagen Accord asks developing countries to recognize the aspects of

deforestation and forest degradation. As well as the activities that can reduce the carbon emission and increase removals, stabilization of forest and carbon stocks. This began the process of bringing agriculture into the REDD+. In 2011 in Durban, agriculture was introduced as a sectoral approach. It is unclear that how we link agriculture with the REDD+. Agriculture is the primary driver of deforestation and degradation. Therefore it should be addressed to handle the situation. Agriculture includes powerful stakeholders and complexities of food security, agriculture policies, and intensification of agriculture sector (Olander, et al., 2012). Introducing agriculture in the REDD discussion brings mining and other sectors beyond forestry. The discussion focuses on enhancing productivity and restoration of degraded lands to reduce pressure on forests.

The adaptation activities through agriculture activities focus on increasing productivity. If they are taken out with REDD+ and clear mitigation objectives it can be an opportunity across agriculture and forestry. Countries need to establish criteria of land use and strengthening capacities of regional and national information system to generate and systemize adequate information for REDD+ inventories. Generally countries acknowledge the guidance of IPCC (Olander, et al., 2012).

There are four kinds of national governance structures for REDD+ to include what main types of options are available. The market based system for financing REDD+ mechanism includes the purchasers and sellers of carbon stored in the forests. Purchasers are likely to be firms following Kyoto agreement guidelines for reducing emissions while sellers are the holders of forests who have rights to use forest resources. Their interaction promotes trade. This system is more like CDM. Governance structure establishes national fund and acts as intermediary between buyers, sellers and financiers of REDD+ projects. If independent of state administration, board will

contain mediators. The thought behind this fund is to set up noncommercial actors being nationally in charge and accountable for REDD+ plans and projects (Vatn & Vedeld, 2010).

Reed (2010) in his article argues that the future REDD+ incentives are still unclear. Multilateral or bilateral public findings will provide incentives to the private sector with or without their link with carbon market. It will be an amalgamation of community based finance and market trading REDD+ credits (Reed, 2010). Along these negotiations there is increase in the multilateral and bilateral finances to assist the development of REDD+ plans. World Bank, United Nations REDD, Forest Carbon Partner and the countries like Norway Germany and UK have set up funding programs to help developing countries. They help them to establish forest degradation and deforestation reference levels, monitoring, reporting and verification systems comprise of representatives of the private sector, civil societies and public authorities and market and national strategies for implementation of REDD+ activities (Reed, 2010).

Such programs are supporting developing countries to analyze past land use data, designing baseline for deforestation and drafting schemes (Davis, et al., 2010). REDD+ activities are led by government. The sub-national projects are developed by the cooperation of government agencies and are promoted by local private actors, so the carbon traded through sub national projects are asked to make their self-transparent for national government to avoid double counting. Therefore it is said that REDD+ might be unattractive to private sector because of its complex nature and benefit sharing arrangements. Some suggest that architectural bases of REDD should be composed on good governance, as it will impact the legitimacy of REDD+ (Corbera & Schroeder, 2010).

2.1.2 Benefits of REDD+

The available literature on REDD+ primarily focuses on the procedures and policy related aspects of the initiative, when discussing its benefits. Economic analysis reveal that REDD+ can prove to be a cheap and efficient way to reduce greenhouse gas emissions when compared to limiting and capturing greenhouse gas techniques. Moreover, he further argues that it can be used as a tool to concurrently mitigate climatic change, improve conservation and improve financial transfers to the low income states (Eliasch, 2008). REDD+ is founded in one primary concept that forests, along with the environment connected services they put forward, are a financially underestimated resource. Hence, all it calls for is the need to correct the market externalities. This can be molded into an effective policy making mechanism as financial incentives will be made conditional on the attainment of environmental results; as REDD+ is essentially a kind of payment for the ecosystem. Hatcher and Bailey (2009) state that in most developing countries, forest management institutions are more than often weak and under- resourced and their governance records are poor. The economic and political processes which drive the deforestation processes are supported by various external parties and powerful individuals whose pressures cannot be tackled by both the state and the locals. Hence REDD+ gives a solid rationale to strengthen and alter forest management and governance, including both the powerful parties as well the local institutions (Hatcher & Bailey, 2009).

Policy making is therefore one of the most imperative and dynamic positive feature of the entire REDD+ concept and initiative.

REDD+ projects can most effectively pave the way for recognizing and actualizing the importance of forests in the realms of economics and development, for not only the tropical forest nations and communities, but the global economy on the whole (Ghazoul, et al., 2010).

A country can obtain REDD+ incentives, through tradable carbon, without the need to pass the rights to the people who hold claims over the forest related resources (Streck, 2009). REDD+ can also lead to the subsidization of alternate energy sources; this is for the individuals who engage in the process of harvesting forests, seeking biomass energy. This can also be used to enhance the scope and significance of their off farm labor opportunities (Groom & Palmer, 2010).

REDD+ works on one primary principle: regarding the Earth's highly diverse forests as a ground for great investments. Hence, the manner in which the REDD+ policies are planned is highly significant; it is the design which will determine the amount of investment and international funding which will be made available for solving the environment related problems of the developing world. If designed in an efficient manner, funding can go up to US \$30 Billion annually. They argue that there is a considerable level of compatibility between climate change, biodiversity and forest management. Keeping this in mind, they suggest that if appropriate attention is given to spaces of high biodiversity then REDD+ poses a great probability to enhance the buoyancy of the concerned ecosystems against the dire consequences of climate change. While referring to the UNEP Assessment Report of 2009, they continue to state that by increasing the investments in restoration, conservation and management of the natural ecosystems, we can best slow down the negative impacts of climate change whilst enhancing sustainable development and accomplishing poverty related MDGs (Rosendal & Andresen, 2011).

In the same vein, Vatn and Vedeld (2010) describe REDD+ as a “triple win”: it will not only decrease greenhouse gas emissions but will also lead to effective mitigation against climate change and reduction of poverty (Vatn & Vedeld, 2010).

Phelps et al (2010) uses data by conducting a multi country study to establish how REDD+ can positively impact two distinguished aspects: policy making regarding the use of forests and community tenure rights to forests and its resources. Since the entire concept of REDD+ is based on performance and practical results it brings into dialogue many facets: forest management and planning, national use of land, negotiations with stakeholders, carbon accounting on a national level, carbon brokering and the deliverance of funds and services to the local bodies.

Larson (2010) states that this entire arrangement benefits the local communities by securing their tenure rights, it strengthens their local individuality and empowers these communities to administer the forests in a sustainable manner; most importantly it provides an income source to the poor areas. REDD+ has a highly vigorous funding mechanism which will enable countries to financially address the issues of technology and capacity. Moreover, it will enable them to improve the process of forest stewardship as it makes conservation an economically attractive phenomenon. He concludes by arguing that these benefits will only meet the light of day if the countries effectively choose to address the political issues which underlie this process aggressively

Orlander, Galik and Gabrielle (2012) reveal that REDD+ can benefit government and forest managers through another means of “cross sectoral integrated policies and programs”. For example agricultural productivity can be targeted in order to reduce the loss of forests while

safeguarding that intensification does not lead to more land clearing through the policies and planning regarding land use.

Lederer (2010) argues that no doubt, REDD+ will significantly lead to the decrease in carbon emissions and will also enhance the effective and efficient management of tropical forests, but the question of how a legitimate instrument will be created to make this a possibility is still unanswered. Since REDD+ has a significant impact on the local governance and its issues, his argument is solely focused on the possibility of creating a transparent, effective and lawful tool for carbon governance which can also promise correct accountability.

2.1.3 Problems in REDD+

The REDD+ is politically and institutionally financed by developed countries. The taxpayers of developed countries raise a question: *“we paid for it hence you should protect it.”* If the external level inspection on these projects is very high then there is a risk that developing countries will consider these projects as a type of imperialism. Therefore there is an urgent need to make certain safeguards on these payments to avoid such kind of issues. In every country there is latent conflict between central REDD+ decision making and decentralizing control to local bodies (Sandbrook, et al., 2010). Commoditization of forest carbon aims at the conservation aspect and ignores the other services or benefits of forests. This reliance on single economic benefit puts forest in a vulnerable position. Forests can be profitable by land-use change then modifications in carbon prices in global politics. Tom Clement (2010) argues in his paper that if the performance based payments are being given to developing countries or local people then it will become politically tricky to prevent them (Clements, 2010) the future activities of REDD will be assessed on the basis of payments made to countries. Bowles (2008) argues that it depends on

how REDD benefit projects are planned, payments will either strengthen motivations to conserve or to weaken forests (Bowles, 2008)

The Rights of indigenous communities is the most important issue in REDD+ implementation. The human right organization fears that the REDD plus offers weak and ineffective protection to local communities. A human rights group on FFP in UK looked at 9 pilot projects of REDD and came up with the argument that forests communities are not consulted adequately on efforts to move the pilot scheme to develop national plan for REDD+. In a report by magazine nature it is written that the national plan of REDD doesn't have a measure to protect the right of these communities living in or near forests. Their free, prior and informed consents are not taken into account which will ensure the benefits provided to them (Griffiths & Martone, 2008; Larson, 2010). There is a critique on REDD+ that it undermines *“tenure rights, disempowering local decision making, limits local livelihood in the name of forest conservation and promote elites to capture the lands and get benefits from carbon payments”* (Minang, 2008). Cotula and Mayers (2009) argues without ensuring tenure rights, the local communities remain susceptible to dispossession (Cotula & Mayers, 2009).

People believe they are dispossessed of the possible REDD+ benefits. Local communities in the tropical states are not as aware of REDD+, but they recognize their input in REDD+ can be highly significant for success (Nepstad, et al., 2006). REDD+ is a policy issue. Forest conservation policies are considered to be monofunctional issues. Therefore the critic is that REDD+ is monofunctional. Some of them see REDD+ as carbon centered mitigation mechanism. Deriving multifunctional benefits from REDD+ is a debate. It is said that the expansion of REDD+ activities in a country are influenced by its interests. Ingrid et al argues that states have high levels of deforestation and forest degradation because of lacking policies.

Corruption, weak law and order enforcements, vague land tenure, and low levels of monitoring, reviewing, verification, capacity, are the causes for policy failure which makes the implementation of REDD more challenging (Visseren-Hamakers, et al., 2012) another question is that REDD+ will focus on potential of REDD+ to negative impacts that are ongoing in forest governance trend which will reverse the decentralization process of many countries.

The structure of REDD+ is politically disputed. Its major concern is establishing if the role of market is important or state administration. This means how to do governance for REDD+. Pierre and Peters (2000) argues that presently emphasis is on market (Pierre & Peters, 2000) which is also the case in REDD+ (Corbera, et al., 2010). It is said that focusing on the market lowers accountability which results in the loss of communication among the state and its citizens and leads to unreliable service delivery: more power and less accountability of local elite. Finally, looking into the co-benefits, there lies the possibility to establish significant links between the policies of poverty reduction and biodiversity preservation. Even though both these issues are of great importance to REDD+ host countries, there can be no assurance if such a varying state of problems will be considered. National biodiversity schemes are often accused for not taking into account the concerns of the rural poor and at times the issues of the indigenous people are even left opposed. Poverty reduction policies are often criticized as being futile. (Vatn & Vedeld, 2010)

2.1.4 Gaps in REDD+

REDD+ has promised for sustained incentives through multilateral and bilateral financial mechanisms. This is a sensible decision which looks forward to establish new institutions. However it is said that this mechanism is ill suited for providing performance based payments of

REDD+ that is because only compliance market can provide sustained funds but the process of establishing this market is also slow. The voluntary market is based on speculations about future compliance markets. In the nonexistence of a compliance market the countries make commitments to each other but not promising the sustained incentives which will damage REDD+. Stakeholders have made a commitment to REDD+ and the expectations are high but REDD+ will become disillusioned if financial transfers are not forthcoming (Clements, 2010)

There is common belief between people that REDD+ will not function if the local people are not taken into consideration. Griffith (2008) argues in his paper that REDD+ is a climate change policy but not a poverty alleviation plan hence the needs of the communities living in the forests remain secondary (Griffiths & Martone, 2008). Angelsen (2009) argues that lack of addressing equity issues in REDD+ can increase the risk of its failure. That will alienate forest people and create conflict which will lose the trust of global agencies to endorse REDD+. Disagreement can lead to deliberate forest destructions (Angelsen, 2009). Such warnings are insufficient for governments that are interested in the REDD+ to undertake the kinds of governance transformation that would guard community rights.

The paper discusses the debate regarding the scope and scale of REDD+. It argues that setting a reference level for REDD+ won't be an easy task as the agendas of local, national and global parties differ from each other; nationally the concern is whether the net impact of REDD+ is positive on climate change where as local parties are less concerned about the carbon levels and more with the co benefits of REDD+. Moreover, REDD+ is heavily dependent on various other things such as the post KYOTO negotiations and the international funding mechanism. Till these aspects of the process are not decided, the long term impacts or even the incidence of the REDD+ altogether in the long run remains uncertain (Visseren-Hamakers, et al., 2012)

Vatn and Vedeld (2009) discuss the possible negative impacts of REDD+ on the poor income local population. The poorest populations of most developing nations are landless and heavily dependent on the forest and its resources for earning their livelihoods. However, they do not own the forests and therefore they cannot claim for compensations over lost forest spaces to REDD+ initiatives. Hence the future of these populations and their monetary survival remains a big question. To ensure that the rights of the affected populations are maintained, REDD+ calls for a rigorous transformation of the administration and local politics as well as representation and transparency. Achieving a healthy level of the mentioned aspects is itself a highly difficult task for developing countries.

2.2 Climate Change and REDD+

As previously discussed, REDD+ emerged as the outcome of international negotiations on global climate change at UNFCCC. Developed countries took part in climate change negotiations and provided resources for REDD+ readiness and projects to developing countries under the climate regime. Hence it is imperative to look at the various concepts of climate change and understand their magnitude and influence.

In the past few decades various climatic changes have been witnessed around the globe many of which have had a devastating impact on mankind. Climate change is explained as *“change in regional or global climate pattern mostly to the increase level of carbon dioxide in atmosphere by the usage of fossil fuels or a long term adjustment in the statistical allocation of weather over period of time that vary from decade to million years, it can be change in usual weather for example, extreme weather events”* (Oxford Dictionary, 2015). According to the definition given by UNFCCC *“climate change refers to a change of climate that is attributed directly or*

indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.” (UNFCCC, 2011) It has become an important topic of discussion on many local and global forums. The United Nations has developed a framework to carry out negotiations on this phenomenon identified as the United Nations Framework Convention on Climate Change. The first UNFCCC Conference of the Parties took place from 28 March to 7 April 1995 in Berlin, Germany. It was the first conference of its kind which recognized climate change at a global level and initiated activities towards combating it on a joint international platform (UNFCCC, 2014). Taken up and signed by over fifty countries this framework is legally binding globally especially for countries which are emitting greenhouse gases for the purpose of production on mega level. Seventy percent of greenhouse gas emissions are caused by developed countries while rest from the developing and underdeveloped world, therefore it primarily becomes the responsibility of Annex 1 (Developed countries) countries to lead the efforts in reducing carbon emissions (Parikh, 1994).

The uncertain climatic conditions pose great challenges for the world, especially for the poor developing nations. Since the lesser developed nations lack the capacity to adapt to or resist the environmental challenges, the agriculture and many other sectors related to the environment in these countries are highly vulnerable. Moreover, in most developing nations the population rate is multiplying by a massive count. Antle (1995) argues that in such a state it becomes difficult to predict the future of different countries in terms of food supplies, population, income, institutions, rate of production and technology. There will be a lot of stress on natural resources because of low income and growth.

Keeping this in mind, agriculture has been given more attention in the recent negotiations on climate change adaptation and greenhouse gas mitigation in UNFCCC (Beddington, et al., 2012). Developing countries are much more apprehensive about their production mechanisms and systems in intense weather conditions in the long run in order to access the level of and to prepare for the stress that may be caused on the food supplies (Godfray, et al., 2011) (Smith, et al., 2013). In this context the developed countries are willing to assist the developing ones in the challenges that are faced due to climate change. They will take on new adoption technologies with payments for mitigation of greenhouse gas emissions. Developing countries understandably look for commitments to mitigate GHG emissions and enhance food productivity, if they are given technology and proper financial support (Ogle, et al., 2013).

The Intergovernmental Panel on Climate Change (IPCC) was created in 1988 to institute solutions for the problems caused by developed countries in the world through rapid industrialization; which resulted in the increase of greenhouse gases in the atmosphere. This panel is considered to play a highly imperative part in the way climate change is dealt with. Unfortunately, it has been surrounded by controversies. Its role has been to assess comprehensively the literature on the objectives, technical, scientific and socio-economic impacts of climate change around the globe. It mainly works on how to reduce the human induced climate change aspects through mitigation and adaptation approaches. This panel from the beginning was a political entity. Its top management is appointed by the government. Therefore Intergovernmental Panel on Climate Change (IPCC) is considered a political entity where as it was supposed to be a scientific entity (El-Hinnawi, 2011).

The impact of climate change and global warming is measured through different models. To estimate the effect of CO₂ a model is used known as General Circulation Model (GCM). It is

used to measure the effect of CO₂ accumulation in the atmosphere. But there are certain limitations to this model; its results are not considered reliable. This is because it is said that they can't predict agricultural impacts. The resolution of General Circulation Model is 2500 square kilometer or larger which is too coarse to present different factors like solar radiation, precipitation and temperature that affect the agriculture of an area therefore, output of this model is considered unreliable (Houghton & Callander, 1992). The GCM model is used to predict the intensification of monsoon. According to IPCC assessment 1990, this model is not able to forecast the impacts of global warming. This model was tested on the El NifioSouthern Oscillation Phenomenon which is a naturally occurring phenomenon that involves fluctuating ocean temperatures in the equatorial Pacific. The changes occurred in the pacific oceans were rapid which had enough effects on the weather pattern and the model failed to predict these changes moreover, the model was unable to predict the changes and behavior of hurricanes in the Caribbean (Antle, 1995).

There are different aspects of studying climate change as it contributes in many factors of the human world. Climate change has links with the energy sector, poverty, natural resources, and extinction of species, power politics, forest cover and many more. According to Brazilian et al (2011) properly climate change is a subset of energy. It is a policy issue. The climate change phenomenon is linked with the traditional energy sector as its root cause is producing energy through burning of fossil fuels. If the model of economic discounting is applied with very low discount rate, the access of poor people to electricity will top the list of impacts of climate change on future generations.

The poverty aspect of climate change can be understood through its mitigation policy by three channels: change in earning patterns, changes in taxation system and modifications in the cost of

living at the level of the poverty line (Hertel, et al., 2011). If we want to comprehend the impacts of poverty through climate change policy we must understand its macroeconomic effects. The applied policies in developed countries should be replicated in the developing countries through world market. Fossil fuel taxes should be imposed in developing countries to reduce carbon emission. This type of tax is well understood over time; by reducing the fossil fuel prices sharply in the annex 1 countries (developed countries which signed Kyoto protocol excluding US), the prices of fossil fuels in the world market will be impacted. Therefore, those regions which are fossil fuel net exporters (developed countries) will lose as net importers (developing countries) will benefit under UNFCCC. The non-annex 1 countries don't have mitigation responsibilities and are likely to be financed by annex 1 regions for mitigation activities. The tax on GHG in annex 1 countries is not extensively analyzed because most of the emissions are done by the farming sector (Baumert, Herzog, & Pershing, 2009). Therefore, this sector has been given less attention in mitigation policies. The carbon tax is increased on methane, nitrous oxide and forest carbon sequestration incentives. The climate policy of annex1 leads to a decline in domestic output of agricultural exports thereby rise in the world prices of these products. The non annex1 (mostly developing countries) exporter of agriculture commodities tends to benefit in this case (Hussein, et al., 2013).

The climate policies that are to be replicated in the developing countries are the policies which helped to reduce emissions in developed countries. Another aspect of climate change adaptation and mitigation policies focus on the role of forests which helps to reduce the impacts of GHG. A framework is set to apply integrative approaches of adaptation and mitigation strategies that will reduce the causes of stress which are considered to be reducing anthropogenic climate change by sequestration of CO₂ through conservation of forests which will help reducing GHG (Papadopol,

2000)(Millar, et al., 2007). To build integrative strategy, first the types of uncertainties should be taken into account, which include an understanding about the current environmental and ecological circumstances, models and information sources about future, planning horizon, institutional assets and societal support (Lindner, et al., 2000).

The climate change policies directly or indirectly affect poverty in developing countries. The farmers get paid for conservation of forests and avoided deforestation. The expenses for environmental services assist in reducing poverty among the poor. When the climate change mitigation policies are implemented in developed countries, including the non CO₂ mitigation and forest carbon sequestration expenditure, the agriculture sector of developing countries boosts its earning through agriculture exports. The wage of unskilled labor also increases. This policy results in reduction of poverty levels within the developing countries (Hussein, et al., 2013)

Dale (2001), Price (2003) and Spittle house (2003)explain that the resilient forests are those forests which adapt to gradual changes of climate change either naturally or by management assistance. Forest management assistance and making them resilient to climate change is an adaptive policy.

Qureshi and Hobbie (1994) argue in the report by Asian Development Bank that climatic changes and its consequences decrease the productivity of the agriculture sector. It has devastating effects on the agriculture sector. CO₂ fertilization can lead to changes in temperature, solar radiation, rainfall and wind patterns which impact the overall productivity of the agriculture sector. Due to global warming the sea level rises and affects the ground water quality. Climate change also affects the frequency of pests and diseases in crops as well as humans. Heat and humidity can cause many problems for crops and human beings which contribute to the poor

condition of the people. In South East Asia and the Inland South the temperatures are expected to rise. The areas where the rainfall and cloud cover are comparatively high are anticipated to face increased sea levels and temperatures (Qureshi & Hobbie, 1994). Diseases like malaria, dengue fever and diarrhea are expected to be epidemic diseases in the upcoming years. Rising sea levels can worsen sanitation problems. Studies of climate change impacts fails to address the determinants of agriculture research investments, technology adoption and innovation. Secondly literature criticizes that new models are based on the production function approach which underestimates technological and economic adaptation and over estimates climate change impacts. For example Ricardian approach focuses on relationship between asset value and environmental characteristics. A disadvantage of this model is that it only gives information on the value of land but not on agriculture production. Therefore based on historical data it is difficult to analyze how structural changes can alter climate change impacts (Antle, 1995).

Masacarelli (2014) illustrates the devastating picture of climate change in his study. In American Samoa, rise in temperature warms water up to 35 degree centigrade for few hours and kills all the coral reefs. More than 500 million people in one way or another are dependent on coral reefs for food and income. Livelihoods of more than 30 million people are dependent on reefs. This shows that how much loss we are bearing because of climate change impacts. Literature suggests that even though we are short of time, we can still manage the impact of climate change.

The climate change policy assessment of poverty impacts on 14 developing countries was done to analyze the policy impacts on developing countries. The assessment shows that a policy reduces poverty in the annex 1 countries which means they are poverty friendly. The policy increases the level of competitiveness of agriculture production in non-Annex 1(developing countries) countries, but when the carbon sequestration motives are added to the policy in non-

annex 1 countries, the overall impact of poverty increases. The leading aspects of this policy are to elevate returns on land, diminish agricultural output and raise food prices. On the other hand the people in developing countries primarily rely on their own labor for income and own little land. Since they spend more income on food that's why they are disadvantaged on the earning and spending fronts. The results are troubling. Carbon sequestration and avoided deforestation mitigation policy promises very low costs, but the mechanism behind this poverty decline also directs the attention of annex 1 countries on the complaints of emission leakages. Avestian et al (2011) in his paper explains that agriculture productions in developing countries are more emission intensive. So any policy shift in production from rich country to poor can raise emission as opposed to reducing them. Migration of production from one country to another country is never complete. Leakage rate are less than 100 percent. Golub et al (2012) in his paper states that there is 35 percent leakage rate in livestock's, 25 percent for the overall agriculture sector; this happens when the Annex 1 countries pursue mitigation policies in the absence of developing countries (Golub, et al., 2012). Authors have found that combining policy with carbon sequestration incentives in developing countries eliminates leakages. As mentioned above, if the poor people rely on little land and their own labor for income doesn't depict that the concerns of the low income group isn't served or considered by climate mitigation policy. As these households can hurt more from the effects of climate change as they are more prone to the impacts of climate change in the future, in the short run they may not get benefits but in long run they will (Hussein, et al., 2013).

Climate change has a devastating effect on the life of species. Bio diversity loss is considered to be the important component of climate change. It is said that one-sixth of all species will become

extinct because of climate change (Lambers, 2015). Therefore it has become necessary to work on climate change to balance nature.

2.3 REDD+ and Sustainable Development

Even though the roots of the concept of Sustainable Development can be located decades or even centuries ago, it was mainstreamed and brought to light as a major feature of international affairs in the 1980s. This came about after the Brundtland Commission, formally known as the World Commission on Environment and Development, printed the groundbreaking report: “*Our Common Future*.” Although critics have targeted the idea by calling it an oxymoron, unclear and redundant, political, community and business leaders have widely endorsed it nonetheless. Sustainable development as a concept and practice has been incorporated by many socio economic classes and cultures around the globe. The United Nations has published many reports since the 1990s which have massively expanded the concept, refined its goals and objectives and has also mobilized many resources and support to meet its strategic needs. The popular ones amongst these reports are the “*Agenda 21 (1992)*, *the programme for the further implementation of Agenda 21 (1997)*, *Investing in Development: a practical plan for achieving the Millennium Development Goals (2005)* and *the Johannesburg Plan of implementation (2005)*” (Matthew & Hammill, 2009).

Jickling (1994) argues that the concept of sustainable development should be as carefully examined as the concept of education; the term is a mere concept and is described by a “paucity of precision.” He gives examples of researchers who have frequently recognized that there stands no standard agreement or settlement on the overall primary goal of the concept of Sustainable Development (e.g. Disinger, 1990; Huckle, 1991; Orr, 1992; Rees, 1989). The analysis of this

term has not yet generated an adequate criterion to explain the common meaning of the concept. In the same vein, Slocombe (1993) points out, that the concept is engulfed in a complexity which has led us to a wide variety of detailed conceptions of how we can achieve it and what is required of us to do so. For some critics, such as Huckle (1991), the possibility of establishing a common conceptual coherence does not exist. He suggests that the term has come to mean different and irreconcilable things to technocentrists and ecocentrists. This view suggests that due to the contradictory and diverging world views, a standard understanding of this concept cannot be achieved. Disinger (1990) reinforces this view: *“To some, the term sustainable development is an oxymoron –a self-contained non sequitur between noun and modifier”* (Jickling, 1994).

On the other hand, Sum and Hills (1998) suggest that sustainable development should be looked at as a policy objective and not a methodology. It is not a contained, rather an overarching idea, which has a highly desirable goal of development. This approach is boldly normative and claims the human actors to be responsible for the current problems and for having the political will and power to overcome these loopholes (Sum & Hills, 1998).

The World Commission on Economic Development has provided one of the most enduring and comprehensive definitions of the concept: *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”* Accordingly to this definition, all people must be given the capacity to lead an adequate standard of living indefinitely. Since our standard of living and its quality are highly reliant on natural resources, they must be maintained and sustained. However, recent developments have established that sustainable development in effect works on an intersection of three fundamentals: environment, social equity and economics. This is how the societal actors have defined sustainable

development. However, the business interpretation of the concept differs to quite an extent. Corporate sustainability is rooted in the economic principle of the neoclassical school of thought. Here sustainable development means sustainable competitive advantage. Accordingly, firms concentrate on the shareholder value, innovation and market share. Hence all organizational goals are fixated on the economic performance and not environmental performance or social equity (Bansal, 2002).

In the age of climate change, the two fundamental objectives of sustainable development: reducing the levels of poverty and avoiding environmental disasters globally, have become more salient than ever. Sadly, even though climate change is expected to lead to technological and institutional improvement which may enhance sustainable development, it also amplifies the challenges which might decrease the rate of sustainable development. However, there are actions which allow us to immediately incorporate risks of climate into sustainable development. Here, Jickling (1994) talks about the adaptation continuum which was developed by McGray et al. Firstly, the continuum has development activities which when implemented have the possibility to decrease the level of exposure faced by households, individuals and communities. Secondly, the continuum is established in a manner which will enhance the capacity to effectively respond to climate risks. Thirdly, the continuum allows for the improvement in the management abilities to limit climate risks by amalgamating the climatic sciences and data into the processes of planning and decision making. Fourthly, it includes measures to effectively address climate change. The argument being made is in favor of making sustainable development a climate sensitive phenomenon. The process of integrating the three principles of sustainable development: *“economic development, social equity and environmental protection need to be done from the eye of climate science”* (Jickling, 1994).

Bansal (2002) argues that the three principles of sustainable development are highly significant and are internally not only connected but also interdependent. Human life is threatened without a healthy environment. In the absence of social equity, the marginalized will abuse the natural environment to achieve a reasonable standard of living. Without a healthy rate of economic development, we won't be able to achieve wellbeing for both ourselves and the generations to come. Bansal argues that these principles should not be treated in a discrete manner; rather they should be integrated and seen as complex and dynamic. Time spans should be changed to long term instead of immediate. Communities should be considered as important when defining sustainable development. Employees, customers, shareholders and residents all make up a community and they represent a community's mindset, culture and belief system. Organizations should develop a sense of which aspects of sustainable development cannot be compromised (Bansal, 2002).

The terms of "Sustainability" and "Development" individually are both important and are constantly evolving. Hence there is a continuous need to reevaluate and reexamine the two terms. Furthermore, matters of "*ownership and common property resources, international and intergenerational equity and quantitative and qualitative growth need to be addressed*" (Jickling, 1994).

Haque (2000) argues that the concepts and definitions of sustainable development emphasize on how human development is not separable from the environment and its concerns. The definition of sustainable development itself implies that the relationship between the environment and development is highly crucial. Development must be carried out in a manner which does not abuse nature, disturb the ecological balance and threaten the future generations in anyway (Haque, 2000).

Bansal (2002) argues that for any practice to be established and institutionalized there must exist certain well defined norms in the society, which is not a reality for sustainable development. Social norms are established through the associations of industry, nonprofit agency endorsements and certifications. By conforming to these, better quality relationships are built between the stakeholders of a firm. However, overall sustainable development has weak norms. This issue is based in the ambiguous and vague definition of sustainable development and its association with business. Hence, this becomes one of the biggest barriers to sustainable development; its failure to find a stronghold in the stakeholders' minds (Bansal, 2002).

For some, the very principle of sustainable development (addressing the requirements of the current generation without compromising the requirements of the future ones) is problematic in itself as the very concept of human needs is open to interpretation and varies from generation to generation and culture to culture. The ethical dimension of the environment which is also of high significance is altogether missing from the concept of sustainable development. The critics also point out that even though the fundamental principle of sustainable development is to achieve equity, they pay no attention to the existing international structures of inequalities and interclass which are adversely impacting the environment. Moreover, they argue that this model does not incorporate the influence of power structures, both local and international, which impact the agreements, conventions, laws and regulations which concern the environmental protection (Haque, 2000).

The aim of REDD+ is not simply limited to reducing the levels of carbon in the atmosphere and forest degradation. Rather it is a holistic strategy which is in fact an effort to stimulate a monetary value for the carbon and in turn stimulate financial incentives for the local communities of the developing world. The UN-REDD Programme acknowledges REDD+ as a

tool for sustainable development. This is because it engages in itself issues of stakeholder management, governance, gender, tenure and safeguards. More so, it is based on building long term partnerships among stakeholders which leads to poverty reduction and sustainable development (The Red Desk, 2010).

REDD+ provides the highly required incentives designed to complement the already existing efforts being made to protect biodiversity and forests in various countries around the world. It is a means for enhancing the incomes and wellbeing of the local communities, reinforcing their rights, building the capacity of local institutions and making the use of land efficient and sustainable. In Germany, the support of the Government towards bilateral and multilateral REDD+ programmes, such as the Forest Carbon Partnership Facility (FCPF), resulted in many sustainable ways. This support initiated the transition towards more sustainable methods for agriculture and improved the livelihoods of many rural communities while simultaneously ridding the remaining forests from extra pressure (German Federal Ministry for Economic Cooperation and Development, 2015).

The case of the Juma Sustainable Development Reserve, which is a REDD+ project in the Amazon, illustrates how REDD+ contributes to the adaptation, mitigation and poverty alleviation objectives of the community. REDD+ here not only contributed to building the resilience of the forests but also led to community development which improved the quality of life of the forest dependent communities. The REDD+ initiative led to increased education in the communities, improved access to basic services, improved transfer between the forest communities, better communication facilities and increased investment in sustainable income generating activities. The focus of this project on the communities access to basic services, including sanitation and clean water, contributed to the not only building the resilience of the community to the shocks of

climate but also enhanced their overall wellbeing and long term income earning opportunities (Crawford, 2015).

Similarly in the case of Kenya, while reporting on the results of implementing REDD+, the report found that REDD+ also allows for the steering of the legal framework in a direction which is much more adaptable to the shocks of climate change and strengthens sustainable development on a legal level. It is a method to revisit and transform policies to benefit the involved stakeholders in a long term sustainable manner (Ministry of Environment, Water and Natural Resources Republic of Kenya, 2013).

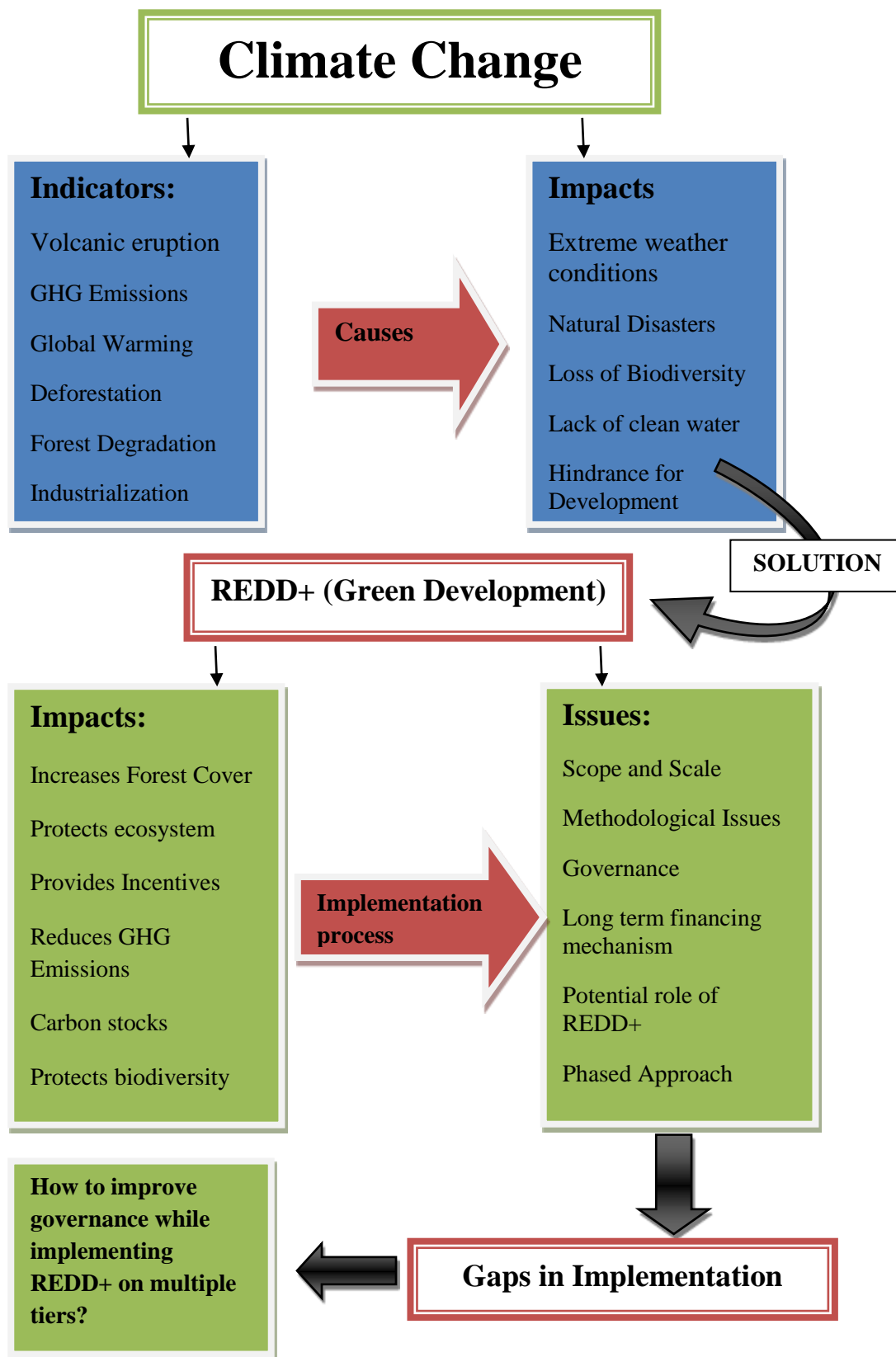
The reviewed literature has helped identify the present gap that exists within the process of implementing REDD+. The basic question being raised is that of scope and scale of the designed REDD+ projects and the varying interests of the national level and local level bodies. On a national level, REDD+ is more concerned with the reduction of carbon emissions. On the other hand, the local level is focused on the co-benefits and the compensations they receive. These contrasting interests not only influence the effectiveness of REDD+ projects but also their overall scope and scale within the geographic area of implementation. This research is focused on identifying this gap in the context of KPK, Pakistan.

2.4 Conceptual Framework for this Study:

Following is the pictorial representation of the conceptual framework designed for the study along with its explanation.

Figure 1 illustrates the relationship between the two overarching concepts being studied for this research: climate change and REDD+ (as a green solution). In the face of the constantly changing world, we find ourselves at the brink of extreme environmental degradation. Climate change has this become more real now than ever. GHG emissions, global warming, deforestation, forest degradation and rapid industrialization have all majorly contributed to magnifying the impact of climate change. As a result we are challenged by a rising frequency in the occurrence of natural disasters, loss of biodiversity, lack of clean water and various hindrances in the process of development. In the light of this, REDD+ has come forth as a solution; it is an up and coming approach towards green development.

REDD+ primarily focuses on protecting and expanding forests; it increases forest cover which directly impacts the carbon levels in the environment, protects the ecosystem and prevents the loss of biodiversity and provides incentives to not only the government but also the local communities. It seeks to maintain the standard of living of the subject populations whilst protecting the environment from further damage. However, literature reveals that REDD+ initiatives world over, face six fundamental issues during its implementation: issues of scope and scale, methodology, governance, long term financing, its potential role and its phased nature as an approach. These eventually contribute to creating gaps in the implementation of REDD+ initiative (Visseren-Hamakers, et al., 2012).



Chapter III

RESEARCH METHODOLOGY

The following chapter discusses the employed research methodology and research methods for the purpose of the study. It covers the techniques of data collection, research design, sampling technique, units of data collection and tools of data analysis.

3.1 Methodology

Methodology is the process for research guided by philosophical assumptions, inquiry, approach, methods, tools and techniques for the process of collecting data that will be analyzed for research (Creswell, 2009)

This study is qualitative in nature which has explored the existing institutional arrangements for REDD+, initiatives of the current government for REDD+ and assessing the challenges in the way of REDD+ in province KP.

3.2 Research Methods

3.2.1 Methods/techniques of data collection

The method used for data collection involves in-depth semi-structured interviews from the government officials, politicians, academia and involved NGOs. Secondly, secondary data was collected in the form of project reports and policy documents published by Ministry of Environment, KP Government. To this end the following research design was proposed.

3.3 Research Design

The primary data was collected through interviews from the stakeholders involved in the process of designing and implementing the project in KP. Besides, representatives of Environment Department KP were also interviewed. The required information to be taken through interviews are listed as [Appendix-A](#).

Relevant data was also obtained from project reports and policy documents published by Ministry of Environment, Environment Department KP Government.

3.4 Sampling

Keeping in view the nature of the study, the purposive sampling technique was used. The proposed list of persons interviewed is attached as [Appendix-B](#). The attached officials in appendix-B are the official of steering committee of environment department who are involved in planning, designing and implementation of this project. Therefore these officials are purposively selected for the interviews. The information gathered was then analyzed through framework analysis.

3.5 Units of Data Collections

Following are the units of data collection for the purpose of this research:

- Government officials
- Politicians
- Academia
- NGOs

3.6 Tool of Data Analysis

For the purpose of data analysis, this research employed the thematic analysis approach under which the framework analysis was selected as the tool of data analysis. Framework analysis is a qualitative method that is appropriately suited for applied policy research and is best for research that has specific questions, a limited time frame, a pre-designed sample and a priori issues that need to be understood. During the analysis stage the gathered data is sieved, charted and arranged in accordance with the key issues and themes. This comprises of a five step process: transcribing the interviews, familiarization with the interviews, coding and indexing, identifying the themes and developing a framework and lastly, interpreting and analyzing the data (Gale, 2013).

The first stage of the framework analysis involved transcriptions of the interviews and compilation of all the collected information. This step is followed by familiarization. Familiarization involves the researcher becoming immersed in the transcripts and field notes from observations so as to gain a complete overview of the collected data.

Indexing and coding takes place once the data has been transcribed and organized. This process involved further categorizing the data in order to sift through the relevant and irrelevant findings. For this purpose I created codes which addressed the research question and objectives, allowing me to organize and make use of the data that was relevant to answering them.

The next step is to create a framework of themes which will allow a complete discussion of the data with regard to the purpose of the research. These can be apriori, however it is imperative that the researcher discusses the new emerging themes from the data set as well. This is followed by an interpretation and analysis of the themes (Srivastava & Thomson, 2009).

Chapter IV

The following chapter illustrates the details of the project being carried out in Province Khyber Pakhtunkhwa. These details were extracted from the secondary data sources gathered from Environment Department of Khyber Pakhtunkhwa. It consists of the REDD+ project's history, evolution and current status.

REDD+ and Carbon Credit Marketing in Khyber Pakhtunkhwa

The forests in Pakistan are severely threatened by growing consumption and dependence of local communities on fuel wood and illegal logging. It is feared that if immediate actions are not taken to control the natural resources, they would be totally consumed in the upcoming 15 to 20 years. Pakistan forest cover is 2.5 percent of the total country's land; Pakistan has the highest annual deforestation rate in Asia (WWF - Pakistan, 2013).

In order to cope up with the situation, the Merlin's Wood with in partnership with country's Ministry of Environment has developed a REDD+ programme in province Khyber PakhtunKhwa. The project will focus on biodiversity conservation, poverty alleviation and will serve as a model for the wider region and nationally. It is claimed that project will benefit the lives of more than 75,000 people living in villages and settlements bordering forest areas (Torwali, 2012).

4.1 Project Details

The project is named "*Development of designated forest carbon stock assessment for REDD+ and promotions of carbon credit marketing in Khyber Pakhtunkhwa*". The project will take place

in Abbotabad, Mansehra and Swat district over an area of 10,000 acres, 40,000 and 50,000 acres respectively. (PC1). In Abbotabad District, it will be implemented in Ayub National Park. In Mansehra District the project activities will be implemented in Kaghan reserve forest in Kaghan valley. In Swat District, project activities will be implemented in the swat protected Forests of Swat forest division. Land cover maps of these districts based on 2007 satellite images and indicating the location of project areas are given in the project cycle 1. Project office will be located in Peshawar in the premise of forestry planning and monitoring circle.

The project is sponsored by Government of Khyber PakhtunKhwa and will be executed by Forest Department, Government of Khyber PakhtunKhwa. All the operations and maintenance will be done by Forest Department, Government of Khyber PakhtunKhwa with the help of Local Communities/Farmers.

The project is already included in the Annual Development Program of environment sector of Khyber Pakhtunkhwa. The inclusion of this project in development portfolio of environment sector, Government of Khyber Pakhtunkhwa was warranted on account of its contributions to climate change mitigation and adaptation through REDD+, poverty reduction and implementation of MDGs. This is first phase of an overall program of climate change mitigation and Adaptation, Sustainable Forest Management and Biodiversity conservation in the province. The larger program is intended to impact environment, biodiversity, economy and society of Khyber Pakhtunkhwa. The total amount for this project in PSDP/ADP 2012-13 is 40 million.

So far amount of 5 million in ADP 2012-13 of environment sector has been transferred to this project (Government of Khyber Pakhtun Khwa, 2012).

4.2 Project Objectives and its Relationship with other Sector Objectives

Following are the objectives to be achieved under the program:

- Conserve and develop forest resources.
- Increase forest area, tree cover and forest lands productivity.
- Increase incomes and thereby improve livelihoods and contribute to poverty reduction.
- Reduce Emissions from Deforestation and Forest Degradation.
- Improve the state of environment.
- Maintain and conserve biodiversity.
- Earn carbon credits under different carbon market mechanism.

4.3 Implementation of REDD+ is justified on the following grounds

- Sustainable forest management provides an effective framework for forest-based climate change mitigation and adaptation.
- Inter sectoral collaboration, economic incentives and the provision of alternative livelihoods, all of which are part this project, are essentially required for reducing deforestation and forest degradation.
- Capacity building and governance reforms implemented as part of this REDD+ project will greatly improve efficiency and effectiveness of other projects and programs in the sector.
- Accurate monitoring and assessment of forest resources, which will be an integral part of this project, will greatly help in making informed decision in the sector.

4.4 Project Description

The REDD+ program aims to establish an effective, efficient and equitable mechanism for REDD+ in the province through the following:

- Reducing carbon emission from deforestation
- Reducing emission from deforestation
- Conservation of forest carbon stocks
- Sustainable management of forests
- Enhancing forest carbon stocks

4.5 Framework and Institutional Development Component of the Project

The framework and institutional development component us meant to put in place the framework conditions institutional arrangements that need to be there for a REDD+ project to be successful.

Following are proposed actions under this component:

- Development of climate change policy
- Review and revision of provincial forest policy
- Development of REDD+ strategy
- Development of supporting action plan for REDD+ strategy
- Review and revision of forest law in support of REDD+
- Formulation of supporting Forest Rules
- Review and revision of Forest planning mechanism.

These are all the major components that were proposed in the project cycle 1 which was proposed in February 2014 for the REDD+ project in Khyber Pakhtunkhwa. The revised PC1 is in the process. Most probably at the end of March 2017 Environment Department will come up with the revised PC1 and continue to increase the pace of work on the project (Government of Khyber Pakhtun Khwa, 2014).

Chapter V

The following chapter presents and discusses the key primary findings of the research. The findings are discussed thematically, keeping in view the gaps identified in the literature and the information revealed by the respondents of the study. It will highlight the institutional arrangements made by KPK government and the challenges faced in this process. It will also analyze the issues and challenges faced by KPK government in the governance and implementation of the project.

REDD+ IN KP: INSTITUTIONAL ARRANGEMENTS, INITIATIVES AND CHALLENGES

5.1 Institutional Arrangements/ Issues and Challenges

In KP, Mr Alamgir Gandapur, former Official in the Pakistan Forest Institute, had a vision which led him to initiate the concept of REDD+ in KPK. The REDD+ initiative is taken for various reasons which mainly include the reduction of the carbon level in the atmosphere, water shed management, biodiversity management, promotion of eco-tourism, socio- ecological aspects and most importantly sustainability of ecology. REDD+ covers different aspects of sustainable development and inclusive development. Inclusive development is known as the subset of sustainable development. REDD+ is more focused towards the inclusive development of society. It provides clean and green environment and also promotes nature. It will improve the well-being of people. It will decrease poverty levels, and improved the promotion and conservation of the environment while reducing the carbon emissions.

5.1.1 History/ background of the project:

According to the respondent Pakistan has a forest cover of 3.3 million hector which is 4% of its total land area. This percentage is the lowest in not only South Asia but the entire world. Pakistan's forests are dwindling by a rate of 2% since 1990 and this rate increased even more between the years of 2000 to 2005, which is an alarmingly high rate of deforestation. After joining the climate change protocols, the Government of Pakistan has aimed to reverse this rate and increase Pakistan's forest cover to 6% in 2016. Therefore Pakistan's Government is now planning to adopt the REDD+ program on a national level. The Government of KPK has already taken the initiative in 2013 after the Pakistan Tehreek-e-Insaf's Government came to the power.

The REDD+ mechanism was adopted in the 15th Conference of Parties (COP) series held in Copenhagen in December 2009. The concept was designed to mitigate the impacts of industrial pollution and protection of the environment. The industrialized countries will provide the developing countries with funds known as carbon credits. The point is to address the issue of greenhouse gases. Pakistan has not adopted the REDD+ mechanism on a national level, however the Government of Kyber PakhtunKhwā has leased land to a British company called Merlin Woods for the coming 40 years to initiate the REDD+ activities in the districts of Mansehra, Battagram, Hazara Division and Swat Malakand.

The respondents explained that the REDD+ project in KPK is a combination of formal and informal institutions. REDD+ essentially a mitigation project to mitigate the impacts of climate change. To this end, the Cancun Agreement declared 2018 as a preparatory year for REDD+. Furthermore REDD+ has been broken down in three phases which are: Preparatory, Implementation and Consolidation phases. In total eight projects were to be conducted by the

Government of Pakistan under the umbrella of Carbon Disposal Management (CDM). Unfortunately, a developing country like Pakistan doesn't have the capacity to work on such grand mitigation projects. In Pakistan the project will be conducted under the supervision of the National REDD Program. According to the Director Forestry Research Division, Pakistan Forest Institute, the federal government and provincial governments have their focal points for the conduction of the project. The focal point of federal government is known as IG (Inspector General Forest) Climate Change Division. The project is mainly funded by the World Bank. US 3.8 million dollars has been allocated for the readiness or preparatory phase. The KPK government has its own focal point. The KPK government is conducting three projects under REDD+ which are related to increasing forests cover, while Pakistan Forest Institute is conducting two projects for carbon stock assessment. One project is scientific while another is technical.

The respondent defined forest as a planted area with one acre ground density and three meter height of the trees. There are different kinds of forests in Pakistan: protected forests, Guzara forests and private forests. Protected forests are state forests with people rights from 60 to 80%. These forests are located in the area of Malakand. Guzara forests are peoples' forests. Government has managerial charge over these forests. Private forests are purely people's forests. In countries like Pakistan, forests are sold by the private owners but the government does not have the capacity to buy it. 60% forests in Pakistan are privately owned. The Bonn Agreement has been signed by the KPK government. They have signed the Bonn agreement but they lack the capacity for conducting such projects so there is a need to look into such issues. Although KPK Government has measured all of its forest the data has been gathered for project but still there are many aspects where they have capacity issues.

The respondent explained that forests have carbon sinking capacity according to their nature. Forests in moist temperature areas like Murree, Punjab and Galiyaat, KPK where forests consist of Deodar trees can sink 180 carbon tons per hectare. On the other hand forests that consist of Cheer and Pine, known as tropical forests, can sink up to 75 ton per hectare. Such forests are located in Swat, Haripur and DIR. Then come the Conifer forest; Conifer forest includes Fir, Spruce, Deodar and Chir Pine. These forests aged from 100 to 150 years and can retain carbon but their growth is very slow. Fast growing trees again release carbon in the air, hence it is better to plant slow growing trees.

There is a huge criticism on the project that it involves planting Eucalyptus. Eucalyptus has a massive water use, but eucalyptus matures early and its forest increases faster than other kinds of trees. This can bring benefits in the long run. Eucalyptus has been planted but in the ratio of 1/3 and that also in saline areas.

The respondent revealed that different countries have different emission rates like China and India are contributing 12.6 % of carbon in air while countries like Pakistan release 0.04% according to the IPCC 4th Assessment Report. In Pakistan there is a misconception that Tsunami 1 Billion Tree Project is REDD+ project but that is not the case. According to a respondent, the Tsunami is an Afforestation project whereas REDD+ is a standing tree project. Tsunami is a natural regeneration program and a part of the Clean Development Mechanism (CDM) projects. The CDM projects are a part of the adaptation program and REDD+ is a part of mitigation program; this being the main difference between these two projects.

The respondent revealed that forest cutting was banned from 1992 in Pakistan and the ban was lifted in 2015. Ban considers the capital value of trees or forest. Scientific management of forest

also began in 2015. If the local community is not allowed to cut the trees they illegally degrade forests to fulfill their needs. By lifting the ban they are allowed to use the forest in a sustainable manner which benefits both the environment and the people. In the REDD+ project it is allowed to cut trees in a sustainable manner.

5.1.2 Administrative Structure

The respondent explained the administrative hierarchy of the forest department as follows. The Director General (DG) heads the Forest Department that comes under Secretary, Additional Secretary and Deputy Secretary of the Forestry, Environment and Wildlife Ministry. Project in Charge comes under the subordination of the DG, followed by the forest Mensuration Officer; these are the high rank officials, who supervise the Range Management and Watershed Management. REDD+ project comes under the jurisdiction of Forest Mensuration Officer. Forest Management consists of forest guards. Guards make a compartment and 3 to 4 compartments make a Beat. The Beat Officer is a BPS 9 Officer; 3 to 4 beats make a block. The Block officer is BPS14. Then comes Range; the Range Officer is BPS 16. Range consists of sub divisions, and the sub division is headed by the Sub Divisional Forest Officer (SDFO) who is BPS 17 officer. Then comes the Directorate, headed by the Community Development, Extension and Gender and Development; CD, E& GAD is headed by a BPS 19 Officer.

The respondent also explained the hierarchy for the project as follows. The forest regions are divided into three segments region wise. A Steering Committee is formed to run the project that is chaired by the Chief Conservator of Forest-1 (Central and Southern Forest Region). Other members include Chief Conservator of Forest-2 (Northern Forest Region, Abbotabad), Chief Conservator of Forests-3 (Malakand Forest Region, Saidu Sharif, Swat), Chief Conservator

Wildlife Department, Peshawar, Director Forestry Research, Pakistan Forest Institute , Peshawar, Deputy Director Planning, Environment Department, Peshawar and Project Director, REDD+ Project, Peshawar. These are the main members for the designing, formulating and execution of the project.

The respondent said that new staff is hired to support the existing staff. Three GIS systems were purchased for the measurement purpose in the project. One inventory is made for all the material and resources to be kept and recorded in. So far the procurement of equipment's incorporated in the existing structure is not enough to strengthen the project. This shows that there are staff and procurement issues in the project. Few motorbikes and cars are purchased specially for the project while rest has been designated by the KPK Government. Overall, the project lacks specialized staff to conduct the project.

The forest department has decided to hire consultancy for conducting the project. One reason for hiring consultancy is that KPK government does not have the capacity and required knowledge for conducting this project. On the other hand the Pakistan forest institute that is conducting the carbon stock assessment project for REDD+ is not hiring consultancy. One of the official said that consultancy was rejected by the officials in the meeting.

5.1.3 Accountability, Mechanism for Monitoring and Evaluation

The respondent said that REDD+ department is conducting different studies and researches in different areas of KPK that will help the forest department to design a mechanism for the monitoring and evaluation of the project. In one project the Pakistan Forest Institute will use the GIS system for monitoring purposes and they are also interested in taking the local community on board for the same purpose. The local community is considered more effective with regards to

the monitoring and evaluation of the project. They have indigenous knowledge and expertise. On the other hand their rights will be respected through this. Social safeguards will be ensured in this manner. The other project that is to be conducted by the Forest Department of the KPK Government will be monitored by the Monitoring and Evaluation Directorate, KPK. They have foreign trained experts who have a complete know how of the GIS system and they are also interested to take on board the local community. To ensure the transparency in the project, World Wildlife Fund (WWF), a third party, will also monitor and evaluate the project.

5.1.4 Funding Mechanism

The respondent said that as such there is no funding mechanism decided for the division of funds. There is no market mechanism for REDD+. So far REDD+ is based on a voluntary market that is 1 dollar per ton. According to the Conference of Parties (COP) 21, market mechanisms for REDD+ will be introduced in 2020.

There are different donors that are funding the Federal Government which includes the World Bank, Asian Development Bank. The Federal Government receives the fund from donor agencies and then provides those funds to the Ministry of Climate Change. Ministry of Climate Change then further provides funds on the provincial level. Currently the Federal Government has stopped funding to the Ministry. As mentioned above the project is internationally funded by the World Bank and Asian Development Bank. US 3.8 million dollars are allocated for the preparatory phase of REDD+ by the Asian Development Bank. The Readiness Preparation Proposal (R-PP) for the project is funded by Norway and is documented by the Ministry of Climate Change Pakistan. It is said that 20% of foreign aid is used for the development of

forests by the Government, while the remaining 80% is distributed amongst the existing forest and their owners. There is no room for private funding or private investment in the project.

5.1.5 Financing Local Community

The respondent explained that the financial mechanism set for the project is financed through different departments which include the Revenue Department of KPK, Forest Department, Agriculture Department, Planning and Development Department and also the local government.

He also said that project will not just focus on environment but it will also help in improving the social wellbeing of the people that are living in these areas. For this purpose 20% of the funds that are generated through such kind of projects are used for the development of community living there while 80% is given to community as a reward for their services in completion and success of the project. The 20% that is allocated for development of the community is spent on water channel bridges, parks, livelihood and jobs. The remaining 80% is given in the form of cheques to the community, for example through trophy hunting; revenue that is generated from trophy hunting is distributed in the local community for conservation of endangered species in that area. In this regard the quantity of Markhor has increased due to trophy hunting. These qualify as the incentives given to the local communities.

5.1.6 Decentralization/ Devolution of Power and Distribution of Resources

The respondent revealed that when it comes to the decentralization and distribution of resources it becomes the subject matter of the Federal Government. According to the 18th amendment made in the Constitution of Pakistan, the distribution of resources has become a provincial matter which includes the Forest Department and the Pakistan Forest Institute. But unfortunately

the Ministry of Environment still exists and has not been devolved to the provinces; they want the Pakistan Forest Institute to continue as a part of their Ministry. Hence it becomes apparent that no powers and resources have been decentralized yet.

5.2 Issues and Challenges in Governance of the project

Following are the issues and challenges faced in managing the scope and scale of the project along with the benefits to the different tiers of the government, reducing local dependence on forests and conflict of interest.

5.2.1 Issues and Challenges in Managing the Scope and Scale

The respondent explained that the theoretical discourse as well as practical implementation of REDD+ project highlights different questions. The main question is that how are they going to manage the scope and scale of this project. Scope of the project is not broad as the project is confined to different districts. However, the scope covers the environment. By environment, we wish to highlight the various ways in which the Government plans on preserving and promoting forests in order to reduce the country level carbon emissions as well as the global emissions. Moreover the scope covers the enhancement of social well-being of the people living in the areas where the project will be conducted.

Now the question of the challenges faced by the KPK Government in order to deliver these elements of the project by involving the state machinery arises. What are the challenges that are being faced by the Government of KPK to manage the scope and scale of the project? According to the respondents, the challenges are mostly related to policy and governance. It was found that various issues and challenges that are faced by the Government in this regard.

The respondent said that one of the major challenges is that the departments that are conducting the project don't have the desired capacity in terms of implementation of the project. Capacity consists of different things like human resource, material resources, technology, institutes, departments etc. After capacity there is need of awareness regarding the importance of this project on a policy level. The officials must completely understand the importance of this project and how can it be beneficial for the economy. This again, poses itself as a great challenge for the KPK Government. These two major challenges are followed by the Institutional arrangement. It is important to know that what the institutional arrangements for conducting this project are, what has been proposed so far and what are they going to deliver through it. Institutional arrangements will clearly the work breakdown structure for all the inline departments. It will help the officials in understanding the scope and scale of project. Different departments will make work plans according to their purposes which will clarify the process of implementing the project. But unfortunately so far no such arrangements are done by the KPK government. The departments that are working on this project have their rights which need to be addressed. Similarly the rights of the people that belong to the areas where the projects are in progress should also be addressed in order to ensure their ownership, rights and safeguards are intact. This is going to be one of the most difficult tasks. Similarly the scale is to regenerate the forests and increase the forest cover on a country level. Since independence Pakistan's forest area is 3%, which depreciated even more in 2000; highlighting the need to improve this rate. For this purpose the project varies from province to province and from city to city. On the other hand the Tsunami Project in KPK covers all the aspects of deforestation and forest degradation. However, they are facing financial issues. The fund is not allocated to any department until and unless

Imran Khan directs it. Imran Khan is not an institution but as being the party Chairman of the current Government he is doing this task by himself in a highly authoritative manner.

According to the respondents, there are many issues with this project. There is no concrete policy for REDD+ in Pakistan. Therefore there is a dire need to establish a coherent and comprehensive framework or strategy to back this project, giving it legal support and structure. Secondly there is no advocacy of REDD+ on any level in Pakistan. There is no promotion of this project on a country level. The government is not providing a proper promotion or a marketing campaign for the project. This will affect its credibility. World over REDD+ is issued on a state level. However, in the context of Pakistan, the Federal Government is not showing any serious concern towards the project. The provincial government of KPK is independently taking charge for the project as the federal government is not supporting the REDD+ initiative financially as well as institutionally. To ensure that REDD+ is implemented in its true spirit, the KPK Government has proposed to the state's Cabinet to register itself as a Sub- national entity for the sole purpose of the REDD+ initiative.

5.2.2 Benefits to the Different Tiers of the Government

According to the respondent this project is very helpful in every aspect. It will help in improving the institutional weaknesses. It will help the Government in developing institutional capacity of the Environment Department enabling them to conduct different types of projects in the future. The KPK government has proposed that 140 officers related to the Environment Department from different provinces will be trained. Social safeguards and social rights of different communities will be ensured through it.

It was found that on a local level, the project will help in improving the tourism industry. It will help in the conservation of biodiversity. The project will help in recharging the water tables that are disturbed by cutting the forests. The project also focuses on the poor community living in the area. It will improve their environment and will provide employment opportunities as well as improve their standard of living.

After the 18th amendment in the Pakistan the powers and resources are decentralized to the Provincial levels. Therefore, the KPK Government is looking forward to improving its economy through its environment. On a provincial level if the project is properly conducted it can generate a handsome amount of money for the province. The carbon foot prints can be transferred in to cash that can be utilized for different purposes.

On a national level if the project is successful it will achieve the goal that has been signed with the International community. Secondly the negative markings for not achieving the MGDs can be improved through good progress. It can bring investment in Pakistan and increase its points internationally. The project can also be helpful in improving the image of our country. It can reduce poverty and improve the well-being of people.

5.2.3 Reducing Local Dependence on Forests

According to the respondent the project will provide opportunity to the local communities by enabling them to generate income for themselves by taking them on board for various tasks such as monitoring and evaluation. Trophy hunting type of events can generate handsome amounts of money for the locals. They will be bound to conserve biodiversity in the area and not harm the forests. All these incentives are indirectly related to the project. However, there is no clearly defined mechanism or incentives for locals in this project. This is one of the major criticisms in

the theoretical discourse of REDD+; that it doesn't focus on the well-being of people and inclusive development rather only on the benefits to the Government and the economy at large.

5.2.4 Conflict of Interest (Government and Local Community)

The respondent explained that so far there is no conflict of interest between the government and local community but if it exists it can be aligned. Forests have tangible as well as intangible benefits therefore each and every stakeholder will get benefit from it. However, if the local community is not accounted for then the Government will have to face serious implications. The local community will stand for their rights as the forests are their basic source of earning. If the Government wishes to align the interests of the all stakeholder, then they need to devise a well-articulated mechanism and strategy which ensures the rights of all the involved stakeholders.

5.2.5 Methodological Issues

5.2.5.1 Strategies and Procedures for Implementation

The respondent revealed that so far no such strategy was designed to conduct the project. Additional charge was handed over to the DFO to conduct the feasibility study of the project without the help of any other staff. Furthermore, the DFO was not allowed to perform any type of procurement. A respondent informed that the project required consultancy for which a committee was formed. However, later this became an issue as the Government only allows hiring consultancy if the project is worth more than 70 Million Pakistani rupees. Since the project did not meet this criterion the consultancy had to be cancelled. It was found that an overall lack of timely knowledge regarding the governmental rules and regulations by the officials has been creating methodological issues.

5.2.5.2 Issues and Challenges (Designing and Implementation)

According to the respondent there are several issues and challenges faced by the KPK Government in the execution of the project. So far there are no institutional arrangements made for the project. There is no Directorate or climate change cell or REDD+ cell formed on a federal level from where the provincial government can take instructions and support to conduct the project. There is no good mechanism for coordination between the Federal and Provincial government. So far no safeguards are taken and no policy is made for carbon stock assessment on federal level. The provincial government has lack of knowledge regarding this concept. In the entire environment department of the KPK Government, there are only seven individuals who have a sound understanding of this project, from which two have retired. They are not properly aware of how to conduct the project. There is a limiting factor that no specialized staff is available for the project. There is only one personnel who has desired knowledge regarding the project in Pakistan Forest Institute. These are all major challenges faced by the Provincial Government so far.

Some of the respondents said that Bonn Agreement is not yet signed by the KPK Government and they also said that the REDD+ Project Cycle¹ is defected, it has a vague picture and it is just a scientific document. This highlights their lack of knowledge regarding the project. So far Rs 40 million is allocated for the project and not even 1 million have been utilized. REDD+ Cell is yet under correspondence with the Ministry of Climate Change. In REDD+ and Bonn Agreement, voluntary carbon market is considered which shows that so far there is no mechanism defined for the transfer of money to the countries.

5.2.6 Phases of Implementation

The respondent said that the readiness phase of the project is in progress. Federal Government is so far acting as a hurdle in the execution of this project; that is because there is no proper coordination between the Provincial and Federal Government. The Provincial Government of KPK has taken the initiative in its own capacity. The mechanism of REDD+ is clear: they don't fund any local or provincial level entity but they fund the Federal Government.

For this purpose, the KPK Government has proposed to register itself as a Sub- national entity; this will allow them to smoothly implement the REDD+ initiative. The following steps have been taken by the KPK Government for the REDD+ initiative:

1. They have initiated two projects on REDD+
2. The provincial REDD+ Steering Committee has been established
3. The carbon inventory in the province has been carried out
4. The work on establishing Forest Reference Level/ Forest Reference Emission Level has been initiated.

5.2.7 Potential role of REDD+

5.2.7.1 Can targets be met?

According to the respondents, the targets can be achieved easily if the KPK Government decides to handle the matters of the project with seriousness on the institutional and policy level. Various bureaucratic and Governmental issues are impeding the proper planning and execution of the project. On the other hand it is difficult to convince the Planning and Development Department to release funds for this project. Similarly, the Federal government and other departments are not

cooperating. The idea was initiated a long while ago. However, not much progress has been made in the field since then; stakeholders are yet to be involved completely.

5.2.8 Future of REDD+ in KPK

The respondent revealed that at this moment, the KPK Government is faced with two options. The first option is to continue with the ongoing haphazard National REDD+ Programme implemented by the Ministry of Climate Change. The second option is the registration of KPK as a sub-national entity for the REDD+ initiative.

By continuing with the first option, the accrual of benefits to KPK will be delayed as the federal level is not paying much heed to the initiative all together. The current institutional arrangements for the REDD+ initiative in the Federal Government is against the true spirit of the 18th amendment. The Federal Government through REDD+ will exercise control and decision making regarding forest conservation in the province. In order to sustain REDD+ benefits it is essential to control deforestation in all provinces which seems very unlikely given the current level of concern shown by the Federal Government. Registration of KPK as a sub- national REDD+ entity after the approval of the Provincial Cabinet and endorsement of the Federal Ministry of Climate Change will help in the Readiness Preparatory Proposal upgrading. It will allow KPK to avail carbon benefits of voluntary markets. It will get KPK ready for large scale implementation as a part of the national programme. Furthermore, it will multiple the REDD+ capacity in the province.

Chapter VI

CONCLUSION

The purpose of research was to find out and highlight the institutional arrangements and challenges faced by the Provincial Government of Khyber PakhtunKhwa. The aim was to address the institutional arrangement made by the KPK government and to highlight the challenges. To this end the research has clearly explained the major issues and challenges that were faced initially in designing and implementations of the project. To achieve the purpose interviews were conducted from the members of Steering Committee and Academia. It was found that with regards to Policy, Institutional Arrangements and governance, the REDD+ Project in KPK is faced with many challenges that need to be addressed in order to achieve the goals. So far the KPK government has failed to promote the idea on every level. Firstly, the concerned departments lack the holistic knowledge of the concept which is a major hurdle in both its planning and execution. While they have a lot of knowledge regarding forestry management, REDD+ which is a new concept in this region, still requires a lot of research and study on the part of the officials. The inline departments are not on the same page that is because the funding mechanism and many more aspects of the project have not been clearly addressed in the document. The institutes engaged in the business do not possess the capacity of conducting the project. The capacity of the institutes on every level is insufficient to successfully implement the project. There is no concrete policy for its execution; it is difficult to execute such a mega level project without one. The stake holders and the different tiers of government are not on the same page; the reason is that the 18th amendment has devolved all the powers to the provincial level but the mechanism designed for REDD+ needs complete involvement of Federal

Government in the project. So a clear communication gap between the Provincial Government and the Federal Government exists. The political difference between the Federal Government and Provincial Government should be set aside in order to successfully implement the project and to gain as many benefits on every tier of the government, economy as well as the society.

6.1 Recommendations

The following recommendations are proposed after a thorough understanding of the current situation of the project in the context of KPK, Pakistan:

- It was evident from the results that only 1 personnel had the academic and theoretical knowledge regarding REDD+ while the rest of the personnel's in the study had only comprehensive knowledge of forestry but only had minimal knowledge of REDD+. Therefore, there is a need to hire experts who have gained higher education in the concerned fields. They can also provide incentives to students by giving them scholarships in order to study in detail the new concepts and themes in the field of environment, conduct research and design policies of how these can be implemented in the local context.
- During the data collection phase of the study, there were only 2 personnel's that were able to differentiate between REDD+ project and 1 billion tree tsunami project. This distinction needs to be made common knowledge within the department to ensure a complete understanding of the scope and purpose of REDD+ within the department itself. By ensuring that the involved individuals have a complete grasp over the details of the project, the implementation as well as the promotion of the project will become smooth.

- The Forestry, Environment and Wildlife Department, Government of Khyber Pakhtunkhwa, lacks capacity in terms of human resource, material capacity and institutional and technical capacity. REDD+ is a grand level project which requires not only specialized individuals but also equipment and management skills. Therefore the department needs to invest in its capacity building.
- A conversation needs to be started between the Federal and Provincial Level with regards to the project in order to enhance their coordination/communication for its implementation. A REDD+ Cell needs to be established on a Federal Level from where the provincial governments can receive guidance and support. A separate unit for REDD+ needs to be established for the smooth and direct funding to the relevant departments. Simultaneously a complete devolution of power and authority under the 18th amendment needs to occur in order to activate the concerned departments on the provincial level.
- A concrete strategy needs to be formed at a Federal Level, regarding the processes and operationalization of the project. A strong policy will form the foundation on which the project will be effectively built and executed. The government should make use of consultancy in order to form a comprehensive policy keeping in mind examples from other nations to pave its way.
- REDD+ theoretically is a top down approach; it is macro in nature and depends on the spillover effect to eradicate poverty. However, in the context of KPK, the approach can be indigenized by adding elements which will incorporate the local community on a greater level. This will not only make the project more sustainable but will also employ an inclusive development approach to eradicate poverty.

- REDD+ poses as a great opportunity for Pakistan to score points in the international community. Environment, inclusive development and mobilizing local communities are a major part of the Sustainable Development Goals. Pakistan has a great opportunity to make up for the negative scoring it has gotten by not meeting the Millennium Development Goals. It now has the opportunity to start from a clean slate towards achieving Sustainable Development Goals.
- Overall, Pakistan needs to be more open towards the new approaches of green development. It needs to shift its focus from immediate economic growth, development of industry and tangible development. Sustainable development and green growth need to be mainstreamed in terms of policy.

6.2 Limitations

The REDD+ project is a government project therefore it was difficult to access the high rank officials for interviews. Although I managed to interview them, they did not provide ample time in order to investigate them on the concerning issues in a holistic manner. Secondly they were not comfortable sharing the information with anyone that is because they themselves were part of the project and certain rules and protocols are to be followed when a governmental matter is being discussed with an outsider. Even though they knew the major and minor issues of the project, they did not openly criticize them because of government protocols. Even after several tries, I couldn't manage to interview the Pakistan Tehreek-e- Insaf Chairman Imran Khan and Chief Minister KPK Pervaiz Khattak. The reason was the political turmoil in the country these politicians were inaccessible. As the project in itself is in pilot stage therefore a lot of the elements which could have been the part of the research based on the literature were not available. Lastly, the officials themselves did not have a complete know how of the various features and processes of REDD+ and its theory. Hence it was difficult discussing the project with them on theoretical lines.

6.3 Further Study Areas

Further research should be carried out on the implications of land tenure of REDD+ and the capacity assessment of the stakeholders of REDD+. Furthermore, research can also be directed towards the identification of appropriate advance technology which should be at par with the global discourse of the Conference of Parties.

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Appendix-A:

Indicators of research objectives:

S.No	Indicator	Sub-indicator
1	Institutional Arrangements	Infrastructure, Institutional Capacity, Accountability, Funding Mechanism, Decentralization of Resources, Devolution of power.
2	Reasons of Initiative	High rate of Deforestation, People dependence on local forests, Forest degradation, increased carbon emission, Rise in temperature, Sea level Rise, Floods, GLOFs, Disasters, climate change.
3	Challenges in implementation	Scope and Scale, Financing, Governance, Methodological issues, Phased Approach, Potential role of REDD+.

Appendix-B:

Sample for the study:

S.No	Name	Designation/Department
1	Kifayatullah Baloch	Chief Conservator of Forest-II (North Forest Region Abbotabad)
2	Salah uddin	Chief Forest Conservator-III (Malakand Forest Region Saidu Sharif, Swat)
3	Nisar khan	Chief Conservator Wildlife Department, Peshawar.
4	Gohar Ali	Director Forestry Research, Pakistan Forest Institute, Peshawar. Lecturer Pakistan Forest Institute.
5	Shabbir Hussain	Project Director, REDD+ Project, Peshawar. Lecturer Pakistan Forest Institute.
6	Anwar Ali	Forest Mensuration Officer, Pakistan Forest institute, Peshawar
7	Shakeel Hayat	Lecturer, Institute of Management Sciences, Peshawar Environmentalist
8	Ayesha Ahsan	Deputy Director Planning, Environment Department, Peshawar
9	Hasan khan	Planning Officer, Director Planning and Environment, Peshawar
10	Faizul Bari	Chief Conservator, Environment Department, Khyber Pukhtunkhwa/ Member IUCN

Appendix C:

Questionnaire:

REDD+ in Province Pakhtunkhwa

Institutional Arrangements and Challenges

Interview Questions

1) Background

- Basic details of the project
- When was it coined, who initiated it, time period, stages and steps
- Why did you feel the need to initiate this project

Institutional Arrangements

2) Administrative Structure

- What is the administrative/ hierarchal structure for this project?
- Have you established any offices within the department and selected fields for this project?
- What staff do you have for the planning and implementation of this project? (technical, administrative, specialized staff and policy makers)
- Did you provide them with any training to carry out the project?
- What are the basic transportation set up and the logistics for the implementation of this project?
- Have you taken any consultants or Corporate Social Organizations on board for this project? If yes, then on which stage: planning or implementation?

3) Accountability

- What mechanism will be used for the monitoring, evaluation and reporting of this project, both in the designing and implementation stage?
- Is the monitoring being done through the GIS system or are you taking the local community on board?

4) Funding Mechanism

- How is this project being funded? Government, international donors or private funding?
- If government: is the federal government funding you, provincial government funding you or both?
- Are the international donors funding you directly or through any other institution?
- Can private institutions invest in the project? If yes, then is there a written law for it?

5) Decentralization of Resources:

- How are resources being decentralized/ distributed for this project?
- How is the federal government distributing the resources to you (provincial level) and how are you further distributing them on a local level?

6) Devolution of Power:

- What is the power structure for the project?
- What instructions, rule and regulations have been passed on to you from the federal government? And how are you passing them on to the local level?

Reasons for the Initiative

- 7) Various reasons for initiating a REDD+ project are present in theory: deforestation, forest degradation, increased carbon emissions, rising temperatures, rising sea levels, disasters and climate change. In your opinion, are there any specific reasons in the context of Pakistan which led you to believe that REDD+ must be implemented here?

Challenges in Implementation

8) Scope and Scale:

- What is the scope and scale of REDD+ in Pakistan?
- How are you managing its scope?
- What issues and challenges do you face in managing the scope and scale of this project?

9) Finance:

- What is the financial mechanism for the project?
- Which departments and officials are involved in the financing of this project?
- How are the locals being financed for the implementation of the project?

10) Governance:

- What benefits do the federal, provincial and local level governments gain individually from this project?
- Are you taking the local community on board for the project? If yes, then how are you motivating them to reduce their dependence on the forests? What incentives are you providing them?
- Do you think there exists a conflict of interest between the three tiers of the government and the local community? Especially between the national and the local community level.

11) Methodological Issues:

- Details on the plan of action, strategies and procedures for the implementation of the project
- What issues and challenges did you face or continue to face while designing and implementing this project? (or expecting to face)

12) Phased Approach:

- How many phases have you divided the project in for its implementation?
- What challenges have you faced at during each phase?
- Do you believe that these challenges arise because of the phased nature of this project?

13) Potential role of REDD+:

- Do you think you can overcome these challenges to achieve the set targets and objectives of this project?
- In your opinion, is this REDD+ approach capable enough to contribute to the economy of Pakistan, reduce poverty and help in building a better environment on a larger scale?