THE ROLE OF CORPS OF ARMY ENGINEERS IN THE NATIONAL DEVELOPMENT OF PAKISTAN: A CASE STUDY OF NORTH-WEST BORDER AREAS AND SWAT

By

Mr. Afficer Rehman Malik

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Dr. Fazal Rabbi ----------
Name of Research Supervisor Signature of Research Supervisor

Prof. Dr. Shahid Siddiqui ----------
Name of Dean (FSS) Signature of Dean (FSS)

Prof. Dr. Muhammad Safeer Awan ----------
Name of Pro-Rector Academics Signature of Pro-Rector Academics

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DEDICATION

TO

THE ALL SAPPERS

Who Sacrificed Their Lives

For

The Prosperity of Pakistan

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ABBREVIATIONS

ADB	Asian Development Bank
AIRRA	Aryana Institute for Regional Research and Advocacy
APC	All Parties Conference
APS	Army Public School
CTE	Construction Team Engineers
CARs	Central Asian Republics
CIA	Central Intelligence Agency (United States)
COAS	Chief of Army Staff
CPEC	China Pakistan Economic Corridor
CTTI	Construction Technology Institute
DG	Director General
EC	Engineers Training Center
FATA	Federal Administrative Tribal Areas
FC	Frontier Constabulary
FCNA	Force Commander Northern Areas
FCR	Frontier Crimes Regulations
FR	Frontier Regions
FWO	Frontier Works Organizations
GB	Gilgit Baltistan
GHQ	General Head Quarters
GOC	Garrison Officer Commanding
IEDs	Imprecise Explosive Devices
IDPs	Internally Displaced Persons
ISI	Inter-Services Intelligence
JCO	Joiner Commission Officer

KKH	Karakoram Highway
KPK	Khyber Pakhtunkhwa
LIC	Low Intensity Conflicts
MAF	Million Acres Feet
MCE	Military College of Engineers
MES	Military Engineering Services
NESPAK	National Engineering Services of Pakistan
NCO	Non Commission Officer
NHA	National Highway Authority
NLC	National Logistic Cell
NWFP	North West Frontier Province
PAs	Political Agents
PDMA	Pakistan Disaster Management Authority
PRC	People Republic of China
QIPS	Quick Impacts Projects
RAW	Research and Analysis Wing
RBTF	Road Building Task Force
RCC	Reinforce Concrete
RE	Royal Engineers
RMB	Road Maintenance Battalion
RPZs	Relief Providing Zones
TDP	Temporary Displaced People
TNSM	Tahreek-i-Nifaz-i-Shariat-i-Mohammadi

TTP	Tahreek-Taliban Pakistan
TTS	Tehreek-Taliban Swat
UAE	United Arab Emirates
UNO	United Nations Organizations
USSR	Union of Soviet Socialist Republics
USA	United States of America
USAID	United States Agency for International Development
VDCs	Village Defence Committees
WOT	War on Terror
WAPDA	Water and Power Development Authority
WB	World Bank

GLOSSARY OF TERMS

Arab-Afghan	Arabs who participated in Afghan Jihad
Durand Line	Pak-Afghan Boundary line
Deobandi	A Sect of Sunni Muslims
Daleel	Argument
Fatwa	Religious decree by religious leaders
Salafi	A Sect of Sufi Muslims
Ilaqa ghair	Lawless Territory
Jirga	An Assembly of Tribes elders
Khels	A group of people related by blood or marriage
Lashkar	Private Militia
Maliks:	Officially designated tribal elders.
Masharan	Tribes elders
Mullah	Religious leader
Riwaj	Social mores or customs
Ranizai	An administrative subdivision (Tehsil) of Swat.

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1. Introduction

The participation of armed forces in the national development missions is not a new concept. From the last few decades, there has been marked increase in the involvement of armed forces in the national socioeconomic development activities. Such trend has been especially developed in Common Wealth Countries, where the need for social development is most serious.[1] Pakistan is a developing country and facing the usual problems peculiar to most developing countries i.e. building defense and economy at the same time. As our country marches forward on its way to progress, The Pakistan Armed Force, besides keeping its strength in proper time to ensure the homeland security and integrity, have also been making a sizeable contribution in national efforts to build up its economy. The armed forces role in its national efforts both direct and indirect, directly they participate in the execution of major development projects of national importance, and indirectly they provide security to the nation. The need for the armed forces collaboration in economic activities is far greater in developing countries since such countries' unlike the developed ones, are often wanting in well-established cadres with the resources and the requisite measure of competence to undertake specialized works to meet the variegated requirements of economic progress.[2] The Army Corps of Engineers play leading and significant role in national development works in the field of communication infrastructure, construction of irrigation and hydraulic structure and assistance rendered in various civic services. The Corps of Engineers is the fourth credible and dynamic part of Pakistan army. The Engineers support to army tactical tasks and its participation in nation building activities is a focal point of its importance. The Corps of Engineers have been classified as one of the effectual arms since the origin of the Army in Indo-Pak Subcontinent under the British era. The participation of its infrastructure development tasks at national level becomes imperative that it should have a segment which could undertake construction works without affecting the warfare engineering tasks of the Army.

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[1] A. D. Shaw," The Military as a Contributor to National Development," *Scientia Militaria, South African Journal of Military Studies*, http:// scientiamilitaria.jounals.ac.za accessed on October 21, 2018.
[2] Muhammad Mumtaz Khalid, *Short History of the Corps of Engineers* (Rawalpindi: Hamza Perviez Printers, 2017), 387.

The idea of Northern Areas development had been conceptual from a long time; but it molds into practical shape. During the regime of Field Marshal Ayub Khan in 1958, the Pakistan army engineer troops launched to build the Indus valley road. Estimates for this road, no doubt, were made in the past but for one reason or the other, it remained unimplemented.[3]

The government of Pakistan decided in 1966 to build a highway to link up with the China through northern areas. Karakoram highway was completed in the middle of 1978, jointly by the Corps of Engineers and the Road Building Task Force of People Republic of China. This highway is a symbol of everlasting friendship with the two countries. The 500 miles all weather road carved out of world's hardest rocks and glaciers; it has also befittingly proclaimed "the eighth wonder of the world".[4]

The experience of Karakoram Highway, potential of Army Engineers was exploit in full for various projects of national importance. One such project was Khanpur Dam in Hazara Division. The acute storage of drinking water experienced by the twin cities, Islamabad and Rawalpindi. The construction of Khanpur Dam was a real test of their ability in the realm of heavy waterways and dam engineering.[5]

Army Corps of Engineers is one of the disciplined and trained construction force who surveyed and executed these works, carried their lives in their hands. They sweltered in unspeakable heat, shivered with malaria, and froze in bitter cold. Success depended on their personal example, courage and resourcefulness; they could not afford to relax. Corps of Engineers always taken up real life challenges, has kept up this tradition and its living examples are works I.e., Chakdara to Chitral road, Gilgit to Skardu road, Khanpur Dam, Wali Tangi Dam, Gomal Zam Dam, airstrips, railway tracks, bridges and hundreds of miles of roads in Azad Kashmir, KPK, Baluchistan and across Pakistan. The Army Engineers has completed challenging mega projects, the road project of Thorkham to Jilalabad have completed in critical and insecure environment. In addition, development contracts in United Arab Emirates are its leading overseas ventures.

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[3] Muhammad Mumtaz Khalid, "Indus Valley Road the Pride Accomplishment: 1966-67," *Corps of Engineers Journal* (2008):111.

[4] Mumtaz Khalid, Indus Valley Road, *Corps of Engineers Journal* (2008): 112.

[5] Shah Qurban Hussain, *History of Corps of Engineers* (Rawalpindi: Pakistan Army Press, 1989), 250.

Army Corps of Engineers has always played a leading role as a first responder to various natural disasters such as floods, land sliding, earthquakes, famine and other any emergency. Army Engineers has been endeavor these professional tasks in past and may be required in the future as well. Flood rescue relief tasks are planned and monitored by Army structure under supervision of Engineers Directorate. Army Engineers played primary role to rescue, relief, rehabilitation, and reconstruction operations in affected areas.

The performance of the construction arm of Army Corps of Engineers, [Frontier Works Organization] is a record of their gallantry in surmounting of obstacles, and of successful achievement against discouraging odds. They have invariably shown immeasurable energy, log of ingenuity, and endurance under circumstances full of stresses and strains entailing deprivation from comforts of life. Even though they expressed no over needs to be appreciated and acknowledged, but in all fairness, their patriotic zeal and favor, their silent commitment to work and supreme sense of sacrifice would surely be taken notice of and the nation will be proud of the way they relentlessly struggled to accomplish their mission[6].

Pakistan Army Corps of Engineers has been committed to building peace, stability and large-scale reconstruction and development program in the war on terrors which affected the north-west tribal areas and Swat region since 2008. The rehabilitation in war-on-terror affected areas were started under Pakistan Armed forces strategy of wining hearts and minds through the peace, security and stability in the region. The grand infrastructure rehabilitation effort by the Corps of Engineers, is opening network of roars, improving irrigation and drinking water facilities, and other socio-economic works.

1.1 Statement of the Problem

Army Corps of Engineers as a part of Pakistan Army are the front line soldiers. The Corps of Engineers as well trained, are required to resolve the problems of movement and survivability of own forces and ensure measures to impede the enemy, yet as “Men of

[6] NoorA. Husain, *Fifty years of Pakistan Army* (Rawalpindi: Pap-Board Printers, 1998):16.

Crisis".[7] The Pakistan Army Corps of Engineers have gained renown in important operations and construction of mega and challenging projects. These histories are a narrative, some of their performances as their progressive growth from a small organization to its today establishment including the reorganizational and restructure changes which it has undergone to meet the needs of a modern force. Some of the tasks carried were out by the army engineers before the partition era like canals, roads, airfields, dams, and railway lines. However, after the partition, Corps of Engineers worked and endured extremes of hardship and discomfort with exemplary courage and braveness to the national prosperity.

The construction of Karakoram Highway with international specifications was as unique and formidable task, that no agency in Pakistan could undertake the job except Pakistan Army's Corps of Engineers, which turn raised a special segment, Frontier Works Organization the construction arm, to undertake the mega and dangerous project.

The peacetime contributions of Pakistan Army Engineers are most valuable achievements. Army Corps of Engineers are not only playing a vital role in nation building, United Nations peacekeeping missions and also provide the civil support to the people of own country, in case of natural disasters and calamities, without affecting itself primary engineering tasks.

This study aimed to explore the peacetime services of Pakistan Army Corps of Engineers in the National Development. Those participations investigate in the study that how the Pakistan Army Corps of Engineers are playing its role in national development among difficult and hostile situations. To analyses the Corps of Engineers contributions in post 9/11 war-on-terrorism rehabilitation/reconstruction activates in North-West Tribal areas and Swat region, is focus of this research.

[7] Shah Qurban Hussain, *History of the Corps of Engineers* (Rawalpindi: Hamza Pervaiz Printers, 1989), 13.

1.2. Objectives of the Study

The Objectives of this research work are:

- To disclose the role of Pakistan Army Corps of Engineers in the national development
- To investigate peacetime achievements, Corps of Engineers in the depressed and remote areas of Pakistan
- To develop understanding about the challenges in the way of rehabilitation in war-on-terror affected regions
- To examine the efforts of Army Corps Engineers for peace and stability in North-West border areas and Swat

1.3. Research Questions

The following research questions are addressed in the thesis:

1. What is the role of Pakistan Army Corps of Engineers in the National development?
2. What kind of peacetime contributions provided by Corps of Engineers in infrastructure development of depressed and remote areas?
3. What types of challenges have Army Corps of Engineers faced towards reconstruction of war on terrors affected areas?
4. What are the positive impacts of reconstruction/developmental projects in North-West Tribal areas and Swat?

1.4. Research Methodology

Descriptive research method has been applied to find out the Pakistan Army Corps of Engineers role in the national development and its participation in building peace and reconstruction of war-on-terror affected areas. Descriptive research, "A research study classified as a descriptive study attempts to describe systematically a situation, problem, phenomenon, service or program or provides information about, say, the living conditions of a community, or describes attitudes towards an issue…The main purpose of such studies is to describe what is prevalent with respect to the issue or problem under study".[8] Both Quantitative and qualitative research approaches have been used in this research. Primary and secondary sources also used for data collection. The primary sources included Army Corps of Engineers projects records, survey reports, annual reports, brief notes, diaries, newsletters, Corps of Engineers journals, year books and maps. Personal of interviews with the persons of Corps of Engineers and civilians of Tribal belt also conducted. Personal observation restoration and construction works of Army Corps of Engineers were also conducted. Secondary data of this thesis included books, journals, newspapers, magazine and online sources have been utilized to collecting information.

1.4.1. Interviews

In-depth Interview is the most common, effective and powerful way of qualitative research method. This technique is especially considerable when gathering distinct (and usually contrastingly) perspectives of all those directly or indirectly involved in the study areas. "An interview is a verbal interchange, often face to face, through the telephone may be used, in which an interviewer tries to elicit information, beliefs or opinions from another person".[9] In this research work, in-depth interview method/technique of the qualitative research has been used to get information from the relevant persons of study areas. In order to achieve the objectives of the study, the qualitative face-to-face interviews have been conducted from the leading members of Tribal Areas and Swat.

[8] Ranjit Kumar, *Research Methodology A Step-by-Step Guide for Beginners* (New Delhi: Sage Publications India Pvt Ltd, 2014), 13.
[9] Robert B. Burns, *Introduction to Research Methods* (Melbourne: Longman Cheshire, 1997), 329.

1.4.2 Quantitative Survey

Quantitative Survey are widely used in Quantitative research method to collect data in social sciences to describe the self-reported characteristics, and opinion of the people. “In a single Survey, a researcher usually inquires about many things and tries to examine variables and address hypothesis”. (Neuman 2006). To get information about public opinion, survey is considered the most appropriate technique of research. Due to the nature of this research study, the survey was conducted to get the opinion of effected people of the Tribal districts and Swat region.

1.4.3 Observation

Observation one of the most important technique of data collection in social sciences. Ranjit Kumar noted that, “Observation is one way to collect primary data. It is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. There are many situations in which observation is the most appropriate method of data collection; when a researcher wants to learn about the interaction in a group, study the dietary patterns of population and ascertain the functions… It is also appropriate in situations where full and accurate information cannot be elicited by questioning, because respondents either are not co-operative or unaware of the answers because it is difficult for them to detach themselves from the interaction”.[10]

1.5 Scope and Delimitation

The national development is a multidirectional theory and its complication has been analyzed many exports and practitioners. According to Taketsugu Tsurutani national advancement as an objective is “The attainment of a certain desired state of affairs for man and society”.[11] Such including the socially, politically, and economically organize society with built-in measures for continuous sustainable growth and standardized processes, generation of change and approaches for the resolution of conflicts.

According to Parrel Heady “In essence, the distinctive quality of the development ideology is the agreement on the desirability of the joint goal of nation building and

[10]Ranjit Kumar, *Research Methodology A Step by Step Guide for Beginners*, 173.
[11]Taketsugu Tsrurtani, *The Policies of National Development* (Candler Publications, 1973), 10.

national progress combined with a sense of movement toward fulfillment of long-delayed destiny, underlying which is a nagging uncertainty concerning the prospects for eventual success".[12] A nation means a group of individuals, people, sharing common culture history, tradition and territory. The national development refers to structural, socio-demographical and value changes from customary to modernize. It also refers to the capability to redress to a new direction. These all, however, it indicates advancement of the people's welfare. In another words, development means people of state leading a better living conditions than they did before any change.

The concept of development itself is a very broad subject. The study does not intend to go to the whole spectrum of development theory. It shall present only a basic framework for understanding what development is all about and how the Pakistan Army Corps of Engineers contributed to national development. The Corps of Engineer's peacetime services to national development can be seen in many forms. This research has been given emphasis on the peacetime professional performs of *Corps of Engineers in the National development of Pakistan especially in North West Tribal areas and Swat*.

1.6 Review of Literature

To better understanding and comprehension of the existing literature on the subject, the review has been divided into different various magnitude and versions. These included some aspects of Pakistan Army Engineers historical perspective and its contemporary dynamics; the peacetime contributions of Corps of Engineers in the national development from different aspects. The relevant literature is available in written forms in the shape of books, official documents, survey reports, articles, departmental journals, newsletters, newspapers and online websites. Separately from that my own observations, interactions and interviews with natives of concerned areas has also become the part of literature. However, the literature of this research focuses on primary sources.

[12]Ferrel Heady, *Public Administration: A Comparative Perspective* (New York: Acid-Free Paper, 1979), 20.

1.6.1 Literature on the History of Pakistan Army Corps of Engineers

Primary and secondary both sources are available on history of Corps of Engineers, its services in National development. The primary sources on history of Army Corps of Engineers includes, I. e. Documents, Annual reports, Brief notes, Newsletters, Corps journals etc.

The FWO Document titled History of Frontier Works Organizations published in 1985, is a comprehensive primary sources which discussed in detail the various projects of Engineers Corps such as Karakoram Highway project, Khanpur Dam project, Lowari road-cum-tunnel project and many other mega projects in cross Pakistan.

Another document History of 491, 492 Engineers Group published in 1982, has represent a detail of various projects of Engineers Corps in remotes areas of Pakistan.

The Newsletters of Frontier works Organization are published quarterly in every every years. These documents provide information about the projects and its progress. Newsletter also brief the historical works are done by Corps of Engineers.

Military College of Engineers journals has briefed the achievement, current and historical events of Corps of Engineers. These journals are available from 1985 to 2018. Engineers in Chief Branch GHQ Rawalpindi, have discussed the issues, problems and achievements the Corps of Engineers.

Brief Notes of various projects from different projects sponsor, deportments, sub-contractors and sub-construction companies. The brief notes are comprehensive primary sources appeared as the picture of projects. The brief notes of mega projects has provided information about historical works of Corps of Engineers.

The Minutes Sheets and Gazette of National Highway Authority, Water and Power Development Authority, Public Works Deportment are also primary sources. It provided both recent and previous works conducted with Corps of Engineers.

Interviewing and Quantitative Survey approaches are generally utilized for data collection and information from concerned people. During the data collection has been used both types of interviews, unstructured and structured interviewing. There are fifty interviews has been conducted from different walks of life. Quantitative Survey questionnaire was distributed to 150 universities students and public places aged 18 to 65. Researcher's personal observations and meetings with various people of tribal belt and Swat during researcher visits in study area are also become literature of this research.

1.6.2. Literature on the Army Corps of Engineers contributions in the development of Tribal Areas and Swat post 9/11

There is a lot of secondary sources of the literature on war-on-terror in Tribal Areas and Swat, regarding the army Corps of Engineers role in the reconstruction/development of tribal areas and Swat, this could not find many books which discuss my research. I have tried their best to collect the relevant parts of writing from different books, articles and other written sources of information.

The first secondary source, I have used is the book written by Muhammad Mumtaz Khalid, "Short History of Corps of Engineers" published in 2017. In this book, he describes the Corps of Engineers role in the rehabilitation/development of tribal areas and Swat post 9/11. Various social and human development projects has been described in detail.

The Pakistan Army Green Books, published in 2011 and 2016 has briefed the major achievements of Pak Army and its segments in tribal areas and Swat in which the root causes of insurgency in North-West tribal areas and Swat and counterstrategy of the armed force, have been analyzed.

In the book on "Insurgency in Swat" written by Tabassum Majeed, published in 2016, he described toward conflict settlement and peace building in Swat Valley from different point of views. He also discussed the roles of various institutions in developing peace in

Swat post conflict era. This is a most reliable document to brief the causes of militancy and its impacts on beautiful Swat Valley. The extent to which it effected its social, political, security and financial structure.

Pakistan Defense Review: A professional journal of the Pakistan Army has briefed the regional and international current issues. Different professional experts review the internal and external matters. Reliable information's about causes of terrorism and their influence in tribal areas and Swat has been provided. He also reviewed the counter strategy of Armed forces regarding peace building and development.

Arif Mahmood Khan, book on "The Challenge of Transforming FATA" was published in 2017. He has discussed the Challenges of Transforming FATA, the role of Governance. He has analyzed the prevailing security environment post war on terror in tribal areas, He also recommended the different procedure for development and peace stability in war-on-terror affected areas.

The book on "Dynamics of Taliban Insurgency in FATA" written by Muhammad Amir Rana has described the different angles of Taliban Insurgency in north-west border areas of Pakistan. He have discussed the origins of the Pakistani Taliban's historical prospective such as impacts of Soviet-Afghan war, Pak-US developed the terminology of Mujahedeen. The understanding of Pakistani Taliban, basic causes of militancy and their objectives.

An article written by Zulfiqar Ali titled "A Study of Housing Reconstruction program in post War Conflict affected Areas District Swat Pakistan" published in *Journal of Biodiversity and Environmental Sciences* in 2018. He briefed the challenges and strategies regarding reconstruction/development in different sectors of Swat Valley.
Another article Written by Amna Malik titled "Accomplishments of FWO, A Tale of successful Development Ventures". This article published in *Melange International Magazine,* January 2018. She discussed the contributions of Frontier Works

Organizations in mega projects. She also described the efforts of Corps of Engineers in difficult projects.

1.6.3. Gap in Literature

The literature both primary and secondary sources on war-on-terror are scattered and not focus on the topic "The Role of Army Corps of Engineers in the National Development of Pakistan: A Case Study of North-West Border Areas and Swat"

That's why this topic is choose to filled the gap in existing knowledge. In the light of above, literature reviews, this research work to discover the role of Pakistan Army Engineers in the national development and its contributions in war on terrors and post conflicts rehabilitation, reconstruction and developments of affected areas is contemporary debate.

The available reviewed of literature provides an absolutely understanding about role of Corps of Engineers in the national development, peace building and rehabilitation works in tribal areas and Swat. However the comprehensive study of existing literature the research gaps will be found. Army Engineers achievements in the national development projects especially building peace through winning the hearts of the people of war-on-terror affected areas, while the primary sources are scattered and do not focus on the chosen topic. Therefore this research aimed to fill the gaps through critical discussion of counter strategy against extremism, anti-state elements and the efforts to restoring peace in tribal areas through developmental works and socio-economic reforms. Thus the research study describe the background factors that relevant with the phenomenon of militancy and peace building process post 9/11 in tribal areas and Swat. ,

1.7. Work Already Done

There is no research work specific on such issue "The Role of Pakistan Army Corps of Engineers in the National Development: A Case Study of North-West Border Areas and Swat." However, various regional and International researchers and authors has discussed relevant topics from different versions. There are many scholars also analyzed on specific topics related to Pakistan military components and sub-organizations. The most relevant works are: The role of Pakistan Army in Baluchistan development, "Pakistan Arms procurement and military build-up", "The Military role in developing countries", Short

history of Pakistan Army Corps of Engineers, “Pakistan and India, the use of Armed forces in national development: a case study of Pakistan” besides, a number of seminars, conferences and newspapers, books, journals, articles and newsletters, also have been published and organized especially on Pakistan Armed Forces. However, no research work has been conducted on “the role of Pakistan Army Corps of Engineers in the National Development: A Case Study of North-West Border Areas and Swat”.

1.8. Organization of Study

Research has been organized into following chapters:

Chapter -One: Introduction

Chapter first of this research consist of an introduction of the submitted topic of the study emphases upon the major issues of the study. In this study whole research, its aims and objectives and the clear dimensions of the research questions have been analyzed. Methodology elaborates how this research will be conducted. Pakistan Army Corps of Engineers its historical background, pre and post partition period.

Chapter-Two: Pakistan Army Corps of Engineers and the National Development: A Historical Prospective

In chapter two, the role of army Corps of Engineers in the national development of Pakistan and its historical achievements pre and post independent have been discussed. The services of the Corps of Engineers during peacetime in national development projects in remote areas of Pakistan have been briefed and analyzed.

Chapter-Three: **Pakistan Army Corps of Engineers and the development of North-West Tribal Areas (Post 9/11)**

Chapter three has briefed an appraisal of North-West Tribal districts. In this chapter, the researcher has analyzed the political, internal, external, overt and covert factor that was involved in the insurgency of tribal region. Also, the challenges towards building peace and development in militancy affected areas have been described the researcher. In this chapter, has highlighted the leading role of Army Corps of Engineers in Tribal Areas after war on terror, rehabilitation/reconstruction activities. The remarkable contributions

of Corps of Engineers towards social and infrastructural development of North-West border areas post 9/11 have been discussed.

Chapter-Four: Army Corps of Engineers participations in the rehabilitation/reconstruction of Swat (Post 9/11)

Chapter four has briefed the efforts of Corps of Engineers to bring peace and stability in Swat after Low Intensity Conflicts after 9/11 and disaster of flood 2010. After establishing peace, restoring the life in affected areas was a big challenge for State. Pakistan Army with the cooperation of local government chased own targets in a record time.

Chapter-Five: **Analysis and Findings of the Research**

Chapter five has brief the quantitative and qualitative data analysis of both methodologies used to plan this study. Analysis, Findings and conclusion has drawn in this chapter.

CHAPTER: 2

Pakistan Army Corps of Engineers and the National Development: A Historical Prospective

2.1. Historical Background of Army Corps of Engineers

The word engineer is derived from the Latin ingeniarius, and it originally meant a person skilled in the art of constructing defenses more gifted than others, and perhaps a genius, or genie, as the French Army still call their engineers. Later the word was given to those who constructed public works, and thus the military engineers were the forerunners of the civil engineer, though the former has often been outstanding in both professions. Hence, the story of the military engineer is, in broadest sense, rivaled by any other arm or service in the British Army.[13]

Appropriately, the science of "Engineering" forced its way as a necessity of military life. The earliest military engineers evidence of work can be found in various parts of the World, like the Hill Forts of Europe was built in the late Iron Age, massive fortresses in the Middle East, fortifications protecting city of Zimbabwe built by military engineers of last civilization, the Great Wall of China was built in 3rd century BC, are examples of the works of military engineers. The Conquests of Alexander the Great have also left traces of works carried out by military engineers in Sub-Continent for crossing Indus and Jhelum Rivers.[14] The engineering is an art of applying science to the better innovation of natural resources to benefit mankind. While the function of the scientist is to know, that of the engineer is to do. But unlike the scientist, the engineer is not free to select the problems that interest him. They must solve the problems as rise and his solution must satisfy conflicting requirements.[15]

One of the tasks of engineers in most field armies of 17th, 18th and 19th centuries was practice of siege warfare against fortresses. If the defender could not starve into submission, the walls had to be breached. Infantry would then assault through the breach

[13] Derek Boyd et al., eds., *Royal Engineers*, 1st ed. (Brian Horrocks, ON: London: Leo Cooper Ltd, 1975), 19.
[14] Hussain, *History of the Corps of Engineers*, xv.
[15]Qurban, *History of Corps of Engineers*, xiii.

to capture the fortress. This could be done by either mining under the walls and exploding a large gunpowder charge or battering them down with artillery fire. Engineers were engaged in both processes. To get near enough to the defenses but still retain some protection trenches were dug towards the fortress. These trenches could not be dug straight in a normal way because the men digging would be exposed to fire from the defenders. These were, therefore dug in a zigzag pattern and progressively at deeper levels towards the enemy, the process being known as sapping.[16]

The history of military engineering is really as long as the history of warfare but every historian had started from somewhere and Colonel Boyd sensibly kicks off with Humphrey de Tilleul, was first recorder King's Engineer, who landed with William the Conqueror in 1966 and supervised the construction of the first Motte and Bailey castle. For the next 900, the Corps of Royal Engineers, under one or other of the many names it has borne, justifiably claim to have taken part in every war in which British soldiers have been involved.[17] The Corps of Royal Engineers had an unbroken record of permanent service to the Crown going back to the military engineers of Norman time, hand-picked by the Monarch for their professional knowledge and holding their appointments by Royal Patent.[18]

During the British East India Company era, need for organizing 'native' troops into regular units was felt by Lord Clive after the battle of Plessey in 1957. Dictates of operations also later demanded rising of European and Indian Pioneers, a body of Miners having been raised during the siege of Tanjore in 1771. As already stated Lascars, Pioneers and Miners and were amalgamated and converted into Sappers and Miners.[19] They organized their respective armies, also set up their units of Pioneers, Madras 1758, Bengal 1764, Bombay in 1777, Sikhs Pioneers in 1857 and established Hazara Pioneers in 1905. The Pioneers units of these periods have maintained their individual status till

[16] Khalid, *Shot History of the Corps of Engineers*, 10.
[17] Boyd, *Royal Engineers*, xix.
[18] Ibid, xxii.
[19] Qurban, *History Corps of Engineers*, 3.

1838. The British government took interest to enhance the strength of Pioneer's units in the first decade of 19th century.[20]

The new regimental organization was tested on active service in Korea when the British Commonwealth Engineers regiments was raised to support a Commonwealth division comprising British, Canadian, Australian and New Zealand Sappers. This was the first time that the military Engineers of the Commonwealth served together in integrated units, in conditions of mobile and static warfare that the battles of both World Wars… since the end of Second World War the Royal Engineers have been involved, with the rest of the British Army, in insurgent and guerrilla all over the World.[21]

The expansion of the Corps in the First World War was prodigious-from 78 Regular, Special Reserve and Territorial Army units totaling 25,000 men in 1914 to 1,832 Royal Engineers units of all kinds with the strength of 330,000 in 1918 proportionally a greater increase than in any other arm.[22] The Corps of Sappers and Miners had become leading force, they achieved their multiple tasks in the war. In 1920, it was formed separate Royal Corps of Engineers. In the starting of World-War-II, strength of Royal Engineers was increased by seven times than World War I and increased the normal engineers' responsibilities with modern equipment, enhanced their professional capabilities.

This is exactly what an Engineer who is commonly called a "Sapper" has to do in the Pakistan army, the Captain T. W. J. Connolly, the industrious Quartermaster and meticulous historian of the Royal Sappers and Miners, he acknowledges those services and wrote, what is a Sapper? "This skillful genius is, as Dryden has already answered, not one but all mankind's epitome, condensing the whole system of military engineering all that is useful and practical under one red jacket. He is a man of all work of the the Army and the public-astronomer, geologist, Surveyor, draughtsman, artist, architect, traveler, explorer, antiquary, mechanic, diver, soldier and sailor; ready to do anything or go anywhere, in short, he is a SAPPER".[23]

[20] Khalid, *History Corps of Engineers*, 22.
[21] Boyd, *Royal Engineers*, 134.
[22] Ibid, 71.
[23] Boyed, *Royal Engineers*, 144.

The unique contribution of Sappers to the art of war in the development of science for military purposes, and their contribution to the early exploration, survey and development of every country of Commonwealth, where the military engineers were very often the only professional engineer in the land. Even to this day Sapper skills and equipment are employed for the betterment of living conditions, water supply, bridges and roads communications in underdeveloped countries. The Sappers has constantly called upon to help in civil emergencies, natural disaster rescue and relief operations.[24]

Pakistan Army inherited its organization and traditions from British Army, its history was therefore, linked to the history of British Indian Army. The organization and traditions of the army before the occupation of subcontinent by the British are lost in the mist of time and, therefore, cannot be linked to the contemporary Corps of Engineers history. The Corps of Pakistan Army Engineers have inherited most of its traditions from the Corps of Royal Engineers.[25]

The depots of the three groups of the Royal Indian Engineers were located in the Indian part of the sub-continent and it was decided at a conference in GHQ at New Delhi in July 1947 to move, in conformity with the general policy of two to one shares for India and Pakistan, King George 5th Own Bengal Sappers and Miners to Pakistan…The Armed Forces Reconstitution Committee, therefore, decided to set up a new Engineers Centre for Pakistan at Sialkot, with volunteers from Bengal Group and Royal Bombay Group of Indian Royal Engineers.[26] The transfer of manpower went almost smoothly but India put hurdles in transfer of other assets such as plants, machinery, Equipment and stores. The Army Sub-Committee had fixed the division of stores in the ratio of 36 percent for Pakistan and 64 percent for India in accordance with the communal strength of the Indian Army.[27]

The Pakistan [Army Crops] of Engineers started with a considerable handicap at the outset, first because there were no Engineers units in the last British Indian Army entirely composed of Muslims, thereby involving transfer of their personnel; secondly, because

[24] Ibid, xxii.
[25] Hussain, *History Corps of Engineers*, xiv.
[26] Javid Masood Pirzada, "History of the Corps of Engineer" *Corps of Engineers Journal* (1971): 14.
[27] Qurban Hussain, *History of the Corps of Engineers* (Rawalpindi: Pakistan Army, 1989), 12.

none of the three regular training centers were located in Pakistan to facilitate adjustment of manpower and equipment to act as a base for the change-over. It was the zeal, sprit and indefatigable efforts of a meager skeleton of the Engineers Centre Staff which organized the new headquarters.[28]

2.2 Corps' Achievements under British Indian Army

The Pakistan Army Corps of Engineers which came into being on the birth of Pakistan 1947, they had behind them a glorious record of long years of pre-independence era. The Corps of Engineers history, linked with British Royal Army. The Corps of Engineers have a skilled historical background from mid-18th century. It's become a branch of British Army in 1758 with the title of Pioneers, and later the Royal Bombay Sappers and Miner, the Indian Sappers and Miners as an active part of British army which has played a leading role in different wars and operations. It was in reorganization of the magnificent performance of the Sappers and miners during World War I.[29] In 1941, commenting on the Royal Engineers performance Lord Montgomery (Field Marshal) comments that:

"The Sapper really needs no tribute from me; their reward lies in the glory of their achievements. The more science intervenes in warfare, the more will be the need for Engineers in the field armies: in the late war there were never enough Sappers at any time. Their special tasks involved the up keeps and repairs communication: roads, bridges, railways, canals and mine sweeping. The Sappers rose to great heights in World War II and their contribution to victory were beyond any calculations."[30]

During the six or seven years succeeding World War II, the three Corps of Sappers and Miners, who were expanded to 20,000 to 30,000 men by that time, again showed their traditional efficiency in almost all the campaigns. Between 1943 and 1946, all the three Corps were gradually merged into the Corps of Royal Indian Engineers.[31]

The unique contribution made by the Corps of Royal Indian Engineers to art of war in the development of service was for military purpose, and there contribution to the early

[28] Javid Masood Pirzada," History of the Corps of Engineers." *Corps of Engineers Journal* (2014): 14.
[29] Khalid, *History of Corps of Engineers*, 26.
[30] Boyd, *Royal Engineers*, 144.
[31] Javaid Masood Pirzada," History of the Corps of Engineers," *The Corps of Engineers Journa*l, Vol. 1, no, 1 (June 1971): 14.

exploration, survey and development of every country of the Commonwealth, where the Sappers was very often the only professional engineer in the land. Even to this day Sappers skills and equipment are employed for the betterment of living conditions, water supply and road communications in underdevelopment countries. They are constantly called upon to help in civil emergencies.[32]

The Royal Indian Engineers who on independence made maximum contribution to Royal Pakistan Engineers, possessed proud full record of officers and men receiving many awards and medals in both Great Wars. The Sappers also remain engaged from 1857 in the Subcontinent on various developmental projects. Some of the works that proved valuable in part of subcontinent has become historical heritage of Pakistan.[33] There are many mega projects that were completed by Royal Engineers in pre independence era, are fallowing;

2.2.1 Bridges

There are many famous and important constructions that were done by Royal Engineers under British rule like Attock railway cum Road Bridge on Indus River located at Khushal Garh, the construction of Chiniot railway cum Road Bridge on Chenab River, Jhelum, Chenab and Sohan bridges, Nowshera railway cum Road Bridge on Kabul River and The construction of Muzafargarh railway cum Road Bridge on Chenab River.

2.2.2 Railway lines, Roads and Tunnels

Construction of railway line from Peshawar to Landikotal was called “Khyber Railways”. After Anglo-Afghan war II, the British Indian Government had linked with north-west border areas through railway track. The construction work was started in 1905 from Kacha Garhi to Peshawar and Jamrud. Coast of construction railway line of Khyber Pass was estimated Rs. 485000 per km. The broad-gauge 1676 mm line Peshawar to Landikotal was completed in 1925. The ruling gradient of three percent from Jamrud to Landikotal Railway Track. Pakistan Railways has continued a weakly passenger service through this track onward 1947. Thousands of people are being beneficiary of this

[32] Boyd, *Royal Engineers*, 1.
[33] Hussain, *History the Corps of Engineers,* 7.

project.[34] There were many other famous Constructions were completed by Royal Engineers such as the railway line from Khushalgarh to Thal, Construction of Sindh-Pishin Railway line, Construction of Bolan, Malakand and Khojak tunnels for communication purpose in pre partition era.

2.2.3 Construction of Cantonments

The Chirat, Darosh, Wana. Miranshah, Razmak, Thal and Zhob cantonments and forts in north-west areas of Pakistan, were built by Indian Sappers and Miners under command of British Indian Army.

2.3. The Army Corps of Engineers' After Independence

At the time of independence in 1947, the main Engineers Units of British Army in India were King George 5th Own Bombay Group, Royal Bombay Engineers the title of "Royal" was bestowed on this Corps by his Majesty the King, in 1913 in recognition of the services of the Corps in World War I and Royal Indian Engineers.[35] When Pakistan came into existence in 1947, Muslim opted from all the above mentioned Units formed the Royal Pakistan Engineers which located its training center at Sialkot. The Pakistan become republic state in March 1956, the Corps renamed its designation from Royal Pakistan Engineers to Pakistan Corps of Engineers.

Pakistan Army Corps of Engineers have always responded to the call of armed forces and the nation since the independence as a 'friend in need'. They proved their mettle and came up to the high expectations of their Nation. The Corps of Engineers have performed to develop infrastructure in border areas and remote places. The Sappers has participated with zeal in all battles, 1948, 1965, 1971 and Kargil war 1999. Corps of Engineers have played an active and unbeatable role in war on terror operations, and always played a leading role in disaster relief and rehabilitation activities such as floods, landslides and earthquakes etc. From the early Sixties the Corps of Engineers have undertaken mega projects like highways, bridges and dams in remote areas to boost up national development. Because of its quality of work and successful execution of projects, the

[34] Kashif Ahmed Khan, "History of Khyber Pass Valley," *The Corps of Engineers Journal* (1971): 4.
[35] E. W. C Sandes, *The Indian Sappers and Miners* (Chatham: The Institution of Royal Engineers, 2000), 81.

Corps of Engineers gradually expanded into other branches of engineering and it was undertaken by mega projects in the country and abroad.

2.4 Organizational Structure of the Corps and its Professional Role

At the departmental level, Engineer-in-Chief (Lieutenant General) heads the Corps of Engineers. He is an adviser to Joint Chief of Staff including services chiefs on technical matters relating civil engineering works. He oversees the issues related to combat engineering development board, induction of equipment and human resources development within the Corps. He also provides technical guidance to the Corps as a whole.[36] Engineer Directorate heads by Director General (DG) Engineers, assists and advises Inspector General Arms on all engineers matters, related to training, periodical reorganization of engineers, modernization trail and evolution of engineers equipment, design of design works/projects, formulation of flood relief/recue schemes and anti-flood measures…The directorate was established at the time of independence in 1947, remained under E-in-C till 1974. Thereafter it was placed operationally under the Chief of General Staff (COGS). After GHQ's reorganization, it has been placed under Inspector General Arms in 2007.[37]

Besides, the Corps of Engineers construction arms, Director General the rank of Major General Head the Frontier Works Organization, who is in turn assisted by four Group Commanders the rank of Brigadiers, they are support to Director General FWO, and looking after own responsibility areas. The every construction Group is consisting of different Engineers Battalions, Quick Construction Battalions, Panniers Battalions and Construction Teams including National Engineering Services Pakistan, National Highway Authority (NHA), Military Engineer Services experts and civil contractors.

2.4.1 Primary Role

The Army Corps of Engineers primary role in war help the military troops to live, move and fight. In the peacetime, while training them to face the challenges of war, they

[36] Mumtaz Khalid, *Short History of the Corps of Engineers,* 1.
[37] Ibid, .2.

perform their primary role in different ways; they never get enough respite when compared to other Arms.

2.4.2 Secondary Role

After the completions of combat Engineer Tasks in the battlefield, the Sappers are available for Infantry role. The Sappers are not only well trained in all Infantry small arms and battle tactics. The Sappers are a proud successor of several warfare honors for braveness in secondary role.

2.4.3 Peacetime Activities

Army Corps of Engineers since independence intimately involved in multidimensional services of nation well beings. During war, Engineers have acquitted themselves with dedication and professionalism par excellence. The same spirit is reflected in involvement of Corps of Engineers in peace time activities, such as construction of roads, bridges, dams and participates in United Nations Organization Peace Keeping Missions.[38] Army Engineers have always played a leading role as a first responder to various natural disasters and any emergency situation such as land sliding, earthquake, flood famine and failure of communication network. Corps of Engineers always ready to undertaken these tasks in the past and future. The Sappers also played a key role in flood rescue, relief, rehabilitation, and reconstruction operations in affected areas. The Corps of Engineers also played a leading role in war on terror as searching, bomb disposal, mine warfare and reconstruction tasks.

2.5 Components of the Corps of Engineers

Army Corps of Engineers consist of four distinct branches, through which components perform its different professional activities.

2.5.1 Combat Engineers

Combat Engineers troops are responsible to provide combat engineers support to the army's offensive and defensive operations. The Corps Formations arranges every

[38] Qurban Hussain, *History of the Corps of Engineers*, 22.

possible combat engineering support in advance to own army troops and create obstacles against enemy aggression through different ways.

2.5.2 Corps of Engineers Construction Branch

Corps of Engineers contributes the nation building tasks during peacetime within its own formations. The national and international level construction engineering projects are undertaken by Frontier Works Organization (FWO), National Logistic Cell Engineers and other special engineer organizations. The 'Construction Arm' of the Corps of Engineers, Frontier Works Organization consists of five Engineers Groups I.e., 491, 492, 493, 494 and 495 Engineers construction Groups. The every Engineers Group of Frontier Works Organization are capable to undertaken any type of task. The regular Engineers Battalions performed the works for a specific time and different Corps of Engineers units were changed back after completion of their tenure. In case of war threat, these Engineer troops revert back to the Army for its primary role. Frontier Works Organization was ranked amongst leading construction arm, capable of undertaking any type of task anywhere in Pakistan and abroad. The Corps of Engineers construction arm in, fact, is a great national strategic asset and a living symbol of connectivity and development.

2.5.3 Military Engineering Services

Military Engineers Service provides construction and maintenance services to all military accommodation and institutions. The military Engineers Services is a non-combatant organization known for construction of facilities, barracks, roads, airfields, water, electricity and gas supplies and maintenance for army, air force, navy and other organizations.

2.5.4 Engineers Survey Groups

All survey and mapping related work for military has been undertaken by Army Survey Group of Engineers. This organization is responsible to provide aerial and ground survey information's for all military forces.

2.6 The Corps of Engineer's Participations in the National Infrastructure Development of Pakistan

Although at the time of need, the entire Pakistan Army is ready to move and help the nation, the Sappers are always seen on the forefront. They are there with or without the other elements of the army. The developmental projects in which Sappers have actively participated over the years cover such diverse fields as the construction of roads, small dams, Airfields and power stations etc.[39]

2.6.1 Construction of Karakoram Highway

The desire of the government of Pakistan to develop the Northern areas had been alive for a long time but its fulfillment remained a dream owing to the magnitude of the task and financial constraints. The Northern Areas of Pakistan had remained neglected for ages. Before independence, Gilgit was known as Siberia of Kashmir and prisoners awarded life imprisonment were thrown across Ranjit Bridge on the Indus River with orders 'never to come back. Irrespective of the lure of precipitous peaks, rolling ranges, glaciers, highlands, valleys, azure lakes and ice cold streams, these areas were considered no more than a vast howling wilderness best left to the forlorn natives and the visiting teams of adventures mountaineers.[40]

Even after independence, the large pockets of 27,000 square miles of the Northern Areas remained terra-incognita, never visited by government official, with the 1500 feet's high Khunjerab Valley remaining totally unexplored. Except for a rout across Babusar Pass, which long stretches was almost a goat tack, the country's narrow link with these areas was through the airline means which even today are bedeviled by mood of weather.

[39] Mumtaz Khalid, *History of Corps of Engineers.* 388.
[40] Muhammad Mumtaz Khalid," Indus Valley Road the Pride Accomplishment: 1966-67," *Corps of Engineers Journal* (2008): 111.

Pakistan's government has plan land link with China later 1965 war with India. Both neighbors have discussed that bargain at diplomatic level and Ambassador to China, Major General N.A.M. Raza and former Premier Chou-En-Le were willing to sign an agreement for construction a "Friendship" Roadway through Northern Areas. The first meeting of technical delegates of both states was held at Kashghar in January, 1966. Pakistan expert team led by the Engineer-in-Chief, Major General Jamiluddin Ahmed Faruqi has discussed with Chains expert's members and led to accord on these points.[41]

(a) Karakoram Highway will linked the both states at Khunjerab Pass.
(b) The road will be complete within two years. People Republic of China has offered to achieve such target.
(c) China will provide complete logistic support to Pakistan's road building troops from Khunjerab Pass is such as transport, fuel, plant, machinery, equipment, clothing, and ration etc.
(d) To transport the 1500 Pakistani road builders from Hotian Airport up to Khunjerab Pass in order to utilize fully the coming season 15 June 1966 onwards, since working in Khunjerab Pass Sector was possible only during 15 June to 15 September.
(e) In June 1967 a joint survey team visit to Khunjerab Pass discuss the requirement of machinery and fixing the junction points for road builders.[42]

The estimates of construction of Karakoram Highway was calculated as the cost of Rs. 1418.514 million but in 1978 when the highway was completed, the expenditure was found to be 3141.6 million, two times of the estimated cost. The project was start at Thakot, Chilas and Gilgit sites in 1967. An Engineers Battalion with total strength of 1500 of all ranks was started the work from Khunjerab at height of 15000 feet. The construction groups 491,492 and Army Engineers units under their command acquired MI-8 Helicopter and C-130, for transportation of heavy machinery to project areas.[43]

The opening ceremony of Thakot Bridge was performed by General A. M. Yahya Khan, (Commander in Chief) on November 22, 1967. In his speech, the Commander-in-Chief

[41]Hussain, *History of Corps of Engineers*, 233.
[42]Hussain, *History of Enginers, Construction Arm,* 234
[43] Muhammad Mumtaz Khalid, "Indus Valley Road the Pride Accomplishment: 1966-67," *Corps of Engineers Journa*l (2008): 112.

paid appreciation to the Engineers who were engaged to this *"*ambitious highway venture*"* He remarked that, "Was bound to have a tremendous impact on the development of Northern Regions which have remained isolated for centuries, congratulating all those who were associated with this great task, he said that their achievement was a golden chapter in the history of Pakistan Army".[44]

Towards the end of October 1971, work on the Karakoram Highway was disrupted on account of war threats from India. By that time, class-12 highway was completed from Thakot to Hallegush 300 miles from Pakistan Army Engineers troops. The Sector from Khunjerab to Hallegush was entrusted to Chinese road builders after withdrawal of Engineers troops and they built 100 miles of it. The Army Engineers Battalions were moved back to project areas, the construction work could only start in June 1972.[45]

The five hundred miles, all weather Karakoram Highway was completed in the middle of 1978 jointly by Pakistan Army Corps of Engineers and Road Building Task Force of Peoples Republic of China. This road is a symbol of everlasting friendship of both countries. Karakoram Highway hacked out of World's toughest mountains and glacier. General Muhammad Zia-ul-Haq, President of Pakistan was inaugurated the road opening ceremony on June 18, 1978. The presence of the Chinese vice Premier Mr. Keng Piao on the occasion added to the importance and glory of the event. The Highway was titled as "Friendship Highway" and commonly known as eight wonders of the World.[46] Some of the salient feature of (KKH) is following;

a. Total length from Thakot to Khunjerab- 616 Kilometers.
b. Overall width - 7-7-5 meters
c. Load Class- 60
d. Rock Blasting- 37 million Cubic Yards
e. Explosive used- 8,000 tons
f. Cement Concrete- 80,000 tons
g. POL used- 80,000 tons
h. Coal used- 40,000 tons

[44]*The Daily Pakistan Times*, (23 November, 1967).
[45] Hussain, *History of Engineers Construction Arm*, 244.
[46] Khalid, *History of KKH*, 56.

i. Road Transport deployed- 1,000 trucks

j. Supplies used- 2,50000 tons[47]

The Karakoram Highway that surmounts any road builders' feat the world over, officially cost them 403 dead, and about 2,000 injured including some who were incapacitated for life. The native labor force, although reluctant and inconsistent initially, stood by suffering equal number of dead and injured, if not more.

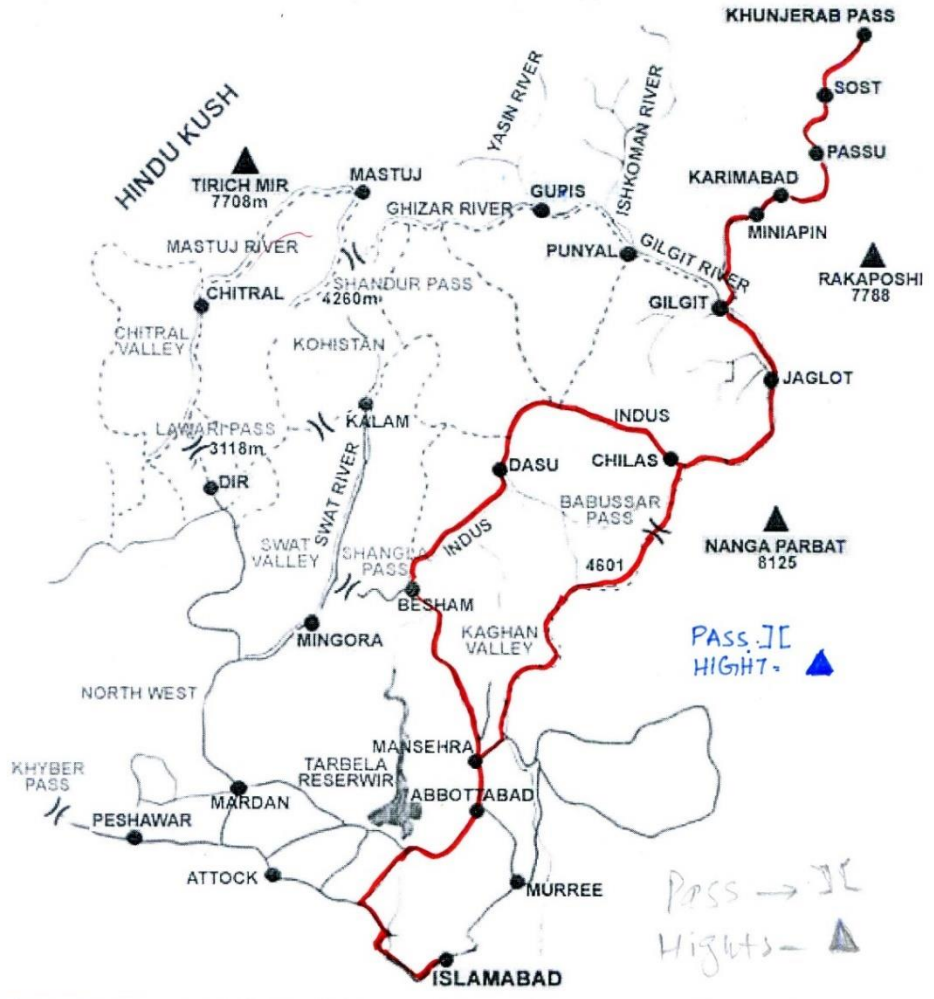
Karakoram Highway KKH hacked through the majestic Karakoram mountain range is a marvel of modern engineering skills. The road builders master the most challenging and hazardous task of its kind ever undertaken. The project of KKH starts from Havelian, cutting through the difficult geological formations of Hazara, Kohstan, Gilgit, and Hunza, reaches the Khunjerab Top, beyond which lies the sprawling province of China, connecting that country with Pakistan. The Highway has been carved along the gorge of Hunza, Gilgit and Indus River. Mountains overlooking this highway are one of the largest masses of jagged mountains in the world. This Highway takes its origin in Hindukush range and ends up in Karakoram ranges.

The thousands of Sappers, military persons, Chinese Road Builders and civilian workers laid down their lives and injured to carve the Karakoram Highway. It was 'carved in blood' is indeed no cliché![48] Corps of Engineers has borne the brunt of the most difficult work. Hugh Hanning stated that the Karakoram Highway is "a good example of the army Corps of Engineers helping to pay for itself."[49] The Karakoram Highway and civilization crept uphill together; cheaper food commodities and household goods, education and healthcare, employment opportunities and representation in the mainstream have gradually transformed the way of life of the people living in these remote regions.

[47] Hussain, *History Corps of Engineers*, 246.
[48] Kalid, *History of KKH*, 13.
[49]Hugh Hanning, *The Peaceful Use of Military Forces* (New York: Praeger Publishers, Inc., 1967), Appendix A.

Figure: 1

Karakoram Highway (Khunjerab to Hassanabdal)



Source: Mumtaz Khalid, History of Karakoram Highway

Karakoram Highway has not only linked Pakistan with China, it also associates north regions to Pakistan. Post 9/11 suddenly emerging scenario, USA Armed forces presence in Afghanistan seemingly hastened the implementation of Chinese long term plans linked to the Karakoram Highway. China really invested in the development of a deep Seaport at Gawadar in Baluchistan Pakistan. Karakoram Highway also enhanced the strategic importance in new era. The Washington Times of 2005 carried a report on China's

"String of Pearls" diplomacy, identified buildup of their "Strategic relationship along the sea lanes" through the South China Sea to the Middle East states, extended to found their new Gawader pearl, in the ways that "suggest defensive and offensive positioning to protect their energy interests, besides serving their broad security objectives".[50]

2.6.2. Lowari Pass Road-cum-Tunnel Project

Lowari Pass is located in Hindu-Kush Range in the way of Chitral. Chitral is an area of 5700 square miles and its population about half million. According to recent investigations this region is full of natural resources like Iron-ore, Copper, Sulfur and Mica etc. However, they will lay untapped until fast credible communication system. The road up to Lowari Pass is fair weather one-way class-9 road. Beyond the Lowari Pass and up to Chitral the road was fit for jeeps only. However, since the Lowari Pass was blocked by snow from end of November to end of May and it takes another month to clear the snow and repair the road, traffic is possible for only for five months in a year. The snowfall range between 5-9 feet, there are innumerable avalanche and snow slide areas. The people from Chitral cross this hazardous area on foot during the winter months. Some are swept by avalanches and buried the snow slides. Human suffering due to these hazards is enormous. Every year some 30,000 tons of food and other necessities of life are transported over the pass.[51]The existing road has steep gradients, sharp curves and poor surface and as a result, the cost of transportation is most high. For example, the cost of transporting of one ton of cargo from Chakdara to Chitral is Rs. 1400. After the completion of road project, the cost was decreased to Rs. 1200 per ton. Thus, resulting in saving the money and time also, the proposed improvement has kept the road open throughout the year. Lowari Tunnel Project composed of 144 miles of two-lane road between Chakdara and Chitral, through 5.9 miles long two-lane tunnel road under the Lowari Pass. An all-weather road need to linking Chitral, the rest of Pakistan had been felt for a long time but serious thought was first given in 1964 when iron-ore deposits were discovered in Dammer Nissar Valley in Chitral.[52]

[5050]*The Washington Post*, 18 January, 2005.
[51] Lowari Tunnel Organization, "Lowari Tunnel Project", *Corps of Engineers Journal* (1980): 29.
[52] *Corps of Engineers Journal*, (1980): 33.

The Water and Power Development Authority has submitted the feasibility report to Ministry of Communications. In 1967, the 5.9 miles long tunnel at 7800 feet was recommended by Water and Power Development Authority but that plan was delayed. Frontier Works Organization was asked to investigate feasibility of an all-weather communication system with Chitral in 1972. This plan now being executed is an outcome of this investigation.[53]

According to plan, the construction was started in July 1976. However, the work was started 10 months ahead of the schedule in September 1975. The first stage of construction has further been split in two stages. Initially, it was planned to excavate the tunnel and install only the temporary support system (New Australian Tunnel Method), having permanent lighting and ventilation system with the cost of Rs. 300 million. The project was allotted Rs. 75 million out of which Rs. 25 million was for the tunnel and rest for the road. It had been planned to buy Rs. 50 million worth of tunneling equipment to commence from both sides working in three shifts to 60 feet of tunnel per day. With Rs. 07 million allotted for import of equipment, the work could be started for only one side in two shifts.[54]

The Federal government reviewed the Lowari Pass tunnel project in 1978 due to shortage of funds. Such mega project was restarted in 2005 by General Pervez Musharraf, but the work was stopped sometimes due to the shortage of funds and political reasons.[55] Due to delaying the mega project from 1976 to 2005 and 2013, it not only suffered a long time but the cost of Lowari Tunnel project also increased from Rs. 300 million 1975, in 2003, it was estimated at Rs. 7.9 billion, Rs. 26 billion in 2010 and now revised cost is estimated at Rs. 46 billion.[56]

Former Prime Minister Nawaz Sharif was inaugurated the main 8.5 KM long tunnel on July 20, 2017. Lowari Tunnel is one of the longest tunnels in Asia having a great national importance and would continue to socio-economic well-being of the area, such as

[53] *Corps of Engineers Journal*, (1981): 35.
[54] Khalid, *Short History of the Corps of Engineers*, 476.
[55] *Corps of Engineers Journal* (2009-10): 166.
[56] *The News International* September 4, 2019.

tourism, rich mineral and other natural resources which promote trade and job opportunities.

2.6.3 The Makaran Coastal Highway Project

Pakistan holds a very important strategic location in the overall geopolitical scenario of South Asia. It has a coastal belt of about 700 kilometers in the South of Baluchistan hugging the Arab Sea. Part of such coastal belt from Liari, 126 kilometers North-West of Karachi to Jiwani near Pak-Iran border is called Makran Coastline. The strategic benefits of this coastline are assured with Jinnah Naval Base at Ormara and China Pakistan Economic Corridor through Gawader Port project. Besides Jinnah Naval Base at Ormara, coastal town of Pasni, Gawader and Jiwani are located all along the coastline. Access to these towns and small ports from inland was difficult due to nonexistence of requisite communication infrastructure. Changing the Regional geo-political environments and interest shown by Central Asian Countries in utilizing potential of our long coastal belt, development of the reliable communication network for the coastal towns has become unavoidable.[57] Realizing the compelling requirements of coastal road, the project of Makran Coastal Highway was approved in 2000 by President Pervez Musharraf Government. The work of this project was physically started in July 2000 by the Frontier Works Organizations, the largest construction agency in the country.

Makran Coastal Highway was one of the difficult projects, Corps of Engineers troops has faced many hardships I.e. sand fly and wind storms, high temperature which goes up to 50c and humidity ranging from 85% to 89% are some of the factors. Construction arm has faced many other challenges such as unobtainable water for construction and drinking purpose, limited availability of construction material and skilled employee force.[58]

[57] Ali Mansoob Raza, Makran Coastal Road-A Milestone in National Development, *the Corps of Engineers Journal* (2001): 57.
[58] Frontier Works Organizatio, *Newsletter* (2004)

2.6.4 The Construction of Khanpur Dam

The Khanpur dam is located on Haro River near Khanpur village district Haripur. This dam aimed to provide water at the northern region of Pothowar plateau and supplements the municipal supply of water to Taxila, Islamabad and Rawalpindi city. The dam construction was started by Machinery Pool Organization of the Irrigation Deportment in 1968, later it was converted to Mechanized Construction of Pakistan Private Limited Company. The (MCPL) company failed to materialize the project and loosed 22 years. The Water and Power Development Authority approached Corps of Engineers construction arm, the Frontier Works Organization February 1982, to take over the challenging project. The Frontier Works Organization undertakes construction of Khanpur dam although; Army Engineers had no previous work experience of such nature. The project to build Khanpur dam was a real test of their versatility in the field of large waterway and dam engineering. The work was starting in September 1982 with the cost of Rs. 34 million on no loss no profit basis.[59] This mega project was completed on 30 June 1984 in a record time.

Following were the left over tasks to be completed;-

a. River diversion works.
b. Impervious blanket.
c. Modification of existing section.
d. Coffer dam.
e. Closure section of main dam.
f. Treatment of abutments.
g. Security and finishing.
h. Plunge Pool, a pool of water 40 feet deep with think concrete lining was to be constructed downstream of spill way.[60]

Timely completion of this mega project, which had been frustrating all the previous efforts, owed its completion to optimum utilization of efforts, selection of best plant and equipment by Army Engineers, its speediest delivery and subsequent on-site repair

[59] Hussain, *History of Engineers Construction Arm*, 251.
[60] Khalid Majid, Khanpur Dam- A Challenge, *Corps of Engineers* journal (1984): 9.

facilities provided by the suppliers, un-tiring efforts of all ranks of Corps of Engineers and the excellent cooperation from concerning deportments WAPDA and other all consultants. The construction of Khanpur dam is yet another feature in the Sappers' cap.[61]

Salient features of Khanpur Dam

a.	Height	167 feet
b.	Length	1,547 feet
c.	Top Level-	1,992 feet
d.	Max water Level-	1,982 feet
e.	Grass Reservoir-	106,000 acres feet capacity
f.	Catchment Area	308 Square Miles
g.	Mean Annual Run Off	280,000 acres
h.	Dam Life-	75 years
i.	Type-	Earthen Rock Gravel
j.	Max Flood anticipated-	182,000 cusecs
k.	Spillway Capacity-	170,000 cusecs
l.	Water Supply to Islamabad-	33 Million Gallons per Day
m.	Water Supply to Industries-	28.50 Million Gallons per Day
n.	Water Supply to Rawalpindi-	69.50 Million Gallons per Day
o.	Irrigation Haripur area (KPK)-	110 Cusecs
p.	Irrigation Attock and Rawalpindi areas-	(Punjab) 87 Cusecs
q.	Diversion Tunnel 10 feet Diameter Capacity	65 Cusecs
r.	At 1983 Level Tunnel Capacity-	2,300 Cusecs[62]

Khanpur Dam was the most prestigious project undertaken by the Corps of Engineers. This has opened an entirely new field for the Corps. The successful completion of this project in time has added to the credibility of the Corps of Engineers in Civil Engineering

[61] Hussain, *History of Corps of Engineers*. 252.
[62] Khalid Majid, Khanpur Dam: A Challenge, *Corps of Engineers journal* (1984): 9.

circles and added to their reputation as a sound Engineering set up even for complicated Civil Engineering tasks.[63]

2.6.5 Completion of Quetta Water Supply project

The Quetta municipality faced shortage of water from 1890; the British Indian Government had taken many steps in different times. With the passage of time, due to increase of population and less rain, the shortage of water has become a serious issue of Quetta city. More than eighty tube-wells was drilled from 1947 to 1960, but only two were yielding water. The Quetta Garrison Commander has decided that the tube-wells would not solve the problem. The Quarter Master General, Major General Visal Muhammad Khan was briefed about possible solution of water crises. In June 1960, the Quetta Garrison Officer Commander had ordered Army Engineers to build the dams on suitable places.[64]

Wali Tangi Dam was built by Corps of Engineers units in 1961, within one year, a record time. It was spread over ten Square miles and its water holding capacity was 1,120 million gallons for water supply purpose of Quetta.

2.6.5.1 The Sra Khula Dam

The construction of Sra Khula Located in Northern Zargun Hills on non-perennial nullah having a catchment area of 23 Square miles where average rain fall is ten inches per year. It is 45 feet high and 90 feet length, concrete type, to connect out-let of dam with Hanna Lake eighteen inches Reinforce Compact Concrete (RCC) pipeline. The Project was completed in December 1962 by Army Engineers. The obtained water is used for drinking and irrigation purposes. An indirect effect of this dam was recharging of few dried-up streams behind the gorge in Shabak Kheli area and greater volume in other springs.

[63] Hussain, *History of Engineers Construction Arm*, 252.
[64] Khalid, *Short History of the Corps of Engineers, Services of Nation*, 393.

2.6.5.2 Kach Dam

The Kach dam is located in North-East twelve miles from Quetta, linked with Kach road. The design of included a reinforced concrete core wall, 620 feet long, 72 feet high and wall fill with earth on either side. Its catchment area is 27.5 square miles and can hold approximate 177 million. The project was undertaken by army Engineers in 1963 but the work could not take off until August 1967 due to first off Rann of Katch conflicts and then 1965. The work was restarted in 1967 and Project was completed within one year, a record time that is a great effort of army Engineers troops.[65] Another site was selected for the construction of Kutchnai Dara dam. It was an earth filled dam with a concrete core with eight square miles catchment area. The Dam was complete in 1967 by Corps Troops Engineers (CTE). The storage water of these dams is linked with municipal water supply and irrigation system of Quetta through reinforced concrete pipelines.

These water dams' projects not only provide clean drinking water for Quetta and surrounding villages and also thousands acres of lands is being used to grow a quality of fruits, vegetables and other crops. Water seepage from dams has had useful side effects on springs and streams water flow. Since construction of dams the hydroelectric power has been generating and the costs of irrigation water decreased. Corps of Engineers troops have completed water dam projects, no profits and lowest labor costs. The costs of dam construction in Quetta were one-fifth if the work had been done by civilian contractors.

2.7 Construction of Connectivity Roads for China-Pakistan Economic Corridor

Pakistan Army Engineers has played a vital role in developing infrastructure necessary for China Pakistan Economic Corridor CPEC. The army Engineers troops has carried out civil engineering work in very critical and hostile areas demonstrated the highest slanders of competence in maintaining Karakoram Highway as well as working on Eastern and Western rotes of the economic corridor. The 556 kilometers of the 870 kilometers carpet road has completed by army Engineers in Baluchistan that is a part of western route of

[65] Mumtaz Khalid, *History of the Corps of Engineers*, 394.

China Pakistan Economic Corridor in less than one and a half year. The construction Arm of Corps of Engineers has employed about 60 percent of manpower and machinery committed to completed various sections of Western route like Gawader-Turbat-Hoshab section of Gawader-Ratodero Highway, widening and improvement of Hoshab-Nag-Besima-Surab Highway and few sections of road Kalat-Quetta-Chaman. These sections will facilitate operationalization of Gawadar deep seaport through enhancing its overall connectives. Army Engineers has been constructed China Pakistan Economic Corridor connectivity routes in Baluchistan, the most difficult and challenging portion of Pakistan.

2.7.1 Surab-Pungoor to Hoshab Road N-85

The construction of 448 kilometers long, Surab-Pangoor to Hoshab road linked Quetta to Gawadar Port through M-8 forming part of China-Pakistan Economic Corridor. That project was started in September 2007 during Gen. Pervez Musharraf era. Project was in progress but was suspended by (PPP) Government in January 2009 due to lack of funding. Frontier Works organizations resumed work in January 2014 and mobilized its resources at 14 locations to complete the project within given time. The construction of road in these areas was a great challenge due to hostile security conditions. Any civil contractor was not willing to work in hostile conditions[66]. The Corps of Engineers Construction arms Frontier Works Organizations accepted the challenge in view of strategic importance. The Corps of Engineers troops and its civil fellows not only contested between terror actions but also faced the hard weather conditions. The 16 members of army engineers including civilians sacrificed their lives and many were injured in the way achieving own target. The Surab to Hoshab road not only provided the shortest connectivity from Gawadar to Quetta but also increased the accessibility to Baluchistan's remote areas. This project has brought peace and stability in the backward areas of Baluchistan has generated economic opportunities for the people.

[66] Frontier Works Organization (*Newsletter,* 2017)

2.8 Role of Corps of Engineers in Natural Disaster and Calamities

Army Corps of Engineers since independence always response to the first call of nation during floods, earthquakes, landslides, storms, bomb blasts and explosions with its true spirit and finest professional skills. The Army engineers always fulfillment excellently helped the nation in every hard situation.

2.8.1 Floods Rescue and Rehabilitation Operations

Corps of Engineers have always played a leading role as first responder to various national emergencies rescue and relief operations in various major floods since independence. Since independence eleven thousand people lost their lives, about 194,000 villages were reportedly damaged or destroyed and 580,000 square kilometers was affected due to these floods. The Corps of Engineers have responded with silence in resolving and deep commitment to alleviate sufferings of distressed and also assisted in the rescue and rehabilitation operations during monsoon high flood season.

2.8.2 Pre Floods Strategies of the Corps

Army Corps of Engineers units under own formations are responsible to arrange all the flood relief equipment before flood emergency. The Army engineers also ensure the coordination with all concerning military and civil agencies who are involved in rescue and relief activities. They also provide the flood rescue equipment like boats, out board Motors (OBMs) and life jackets with expert crews. The Engineers Directorate, flood rescue and relief center under own formations/authorities; they are standby in 24 hours.

2.8.3 Responsibilities of the Sappers in Floods Operations

The army Engineers not only secured the countrymen, their properties and important strategic locations but also continued the communication structure through alternative dry and vet bridges. They repaired all the damaged means of communication and timely strengthened/breaching of flood protection bunds to minimize the despoilment.

2.8.4 Post Floods Activates

The Corps of Engineers formations continued to assist in physical rehabilitation of people and assisted the civil deportments to review their flood rescue/relief procedure. A comprehensive flood analysis reports has since been derived as a guide line for feature.

2.8.5 Corps of Engineers Contribution in Voluminous Floods

The Corps of Engineers has played impotent role in the main floods through rescue and rehabilitation operations since independence. Sappers not only saved the lives of citizens, but also protected the nation's assets. Army Engineers have well trained Sappers and latest equipment to fight with waves of rivers.

2.8.6 Flood Rescue Operation 1992

Summer monsoon in 1992, due to heavy rainfall, the flood arise over catchment of Indus and Jhelum rivers. This was the second vast flood in the history of Pakistan since 1959. The Azad Kashmir and northern region was worst hits and many villages were swept away. The roads and bridges were badly affected, the Karakoram Highway was broken from various places due to land sliding and floods. The land communication was cut off from the Northern areas and Azad Jammu and Kashmir region. Indus River heavy flood moved to south, threatened the Multan and Muzaffargarh cities. The loss was assessed as; 2600 person's dead, 9,299,300 persons affected, 12,675 villages affected, 350,000 house demolished and 4,796,051 acres area was upset. The total damage in financial terms is estimated at approximately US$ 1 billion.[67] The civil administration of flood threatened areas was requested to Pakistan Army for rescue and relief operation.

Army Engineers Troops under own organizations immediately took charge of the situation and strengthened the canal embankments. Many flood safety bund was blown off to release the water pressure, thousands of people were rescued and shifted to safe areas. The Army Engineers troops have provided alternative dry and wet bridges, 1600 kilometers of roads were repaired to restitute the communication network throughout the country.

[67] United Nations Organization Repot on 1992 Flood in Pakistan, United Nation Organization Deportment of Humanitarian Affair, no, UNRO, 92/0680 (September 16, 1992)

2.8.7 Flood Rescue Operation 2010

The country faced another heavy monsoon season rain floods in 2010. North-West regions of Pakistan particularly Khyber Pakhtunkhwa province were mostly affected in this time. Floods of 2010 was began in last week of July coming after heavy monsoon rains falls. River flow surpassed the record of the last hundred years. Pakistan's north-west areas badly effect, approximately 130,000 square kilometers of area and nearly 20 million people and estimated area of 4.386 million acres were affected. It also caused broad disaster to infrastructure such road network, public services, power and irrigation system.[68]

The water in Kabul River was so much that area from Peshawar to Khairabad areas looked like a sheet of water. About five thousands Sappers with equipment from different Engineers formations were mobilized for rescue and relief operation on the request of civil administration. Thousands of flood affected people were rescued to safe areas.

Army Engineers made special efforts and completed the rehabilitation of almost all the damaged bridges in Malakand, KPK, Punjab, Sindh and Baluchistan in a record time by employing army equipment bridges.

2.9 The Corps of Engineers Efforts to Rescue and Rehabilitation Operations in Earthquake 2005

Earthquake of October 2005 was badly affected the north-west areas of Pakistan, Azad Jammu and Kashmir and KPK Province, directly affecting 3.5 million people. The casualties resulting from the earthquake as confirmed officially was 74,698 dead, 106.000 injured, putting it higher than high scale of disaster of the 1935 Quetta earthquake. Three million people lost their houses, more than 2,700 villages were affected, area of 30,000 square kilometers. The communication system was badly damaged with aftershocks and landslides. Pakistan army launched largest rescue and rehabilitation operation in affected

[68] Khalid, *Short History of the Corps of Engineers*, 411.

areas. Army assumed the role of "Central Coordination Agency" and performed the Operation.[69]

In Islamabad one of the four towers of residential complex, Margalla Towers had collapsed and it was believed that many people were still under the debris. General Head Quarter was approached and ordered to Army Engineers Brigade Group to move Engineers troops with necessary equipment to affected areas. An Engineers Battalion was immediately moved to tower and started the rescue operation. The Engineers troops moved to Bagh area of Azad Jammu Kashmir and carried out different rehabilitation tasks. It cleared the landslides and opened the 280 kilometer of roads and built 17,500 temporary shelters for affected at Bagh and surrounding areas.[70] The army Engineers troops opened 120 kilometers of road and 16,000 temporary shelters in Muzafarabad areas.[71]

The Corps of Engineer's troops has played a leading role in the 'Operation Life-Line', which was launched for the rehabilitation of the people of earthquake hit areas. Army Engineers Units were immediately moved to earthquake hit areas and completed different rehabilitation tasks in Muzafarabad, Garhi Habib Ullah, Balakot, Kaghan Valley and Shinkiary areas.

The entire Azad Kashmir badly affected by major earthquake especially Karli Nullah and Bani Hafiz Nullah. The landslide blocked both Nullah due to which village Hattian Bala and the people of downstream also lockdown. The Prime Minister of Pakistan instructed Engineers-in-Chief visit to the areas and readdress the problems. Director General Frontier Works Organization undertaken the difficult task because a sizeable branch nullah to blocked water flow. Army Engineers troops tried their best to complete own task before Monsoon season of 2006. Water required size of the breach will be provided to allow the water to flow. The work was completed in April 2006.[72]

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[69] Altaf Qader Bajwa, "Disaster Management in Pakistan and Roll of Pakistan Army*," Corps of Engineers Journal*, (2008): 20.
[70] Khalid, *Short History of Corps of the Engineers*, 414.
[71] Khalid, Short History of Corps of Engineers, 416.
[72]Frontier Works Organizations, *Newsletter*, Vol. XIV 4th (Quarter 2005): 5.

Army Engineers troops has played a significant role in rehabilitation process with the Army Central Coordination Agency. It provided engineering and technical support in different fields such as restoration of damage of bridges, roads and removing the debris after earthquake and landslides, unblocking waterways and restoration of public facilities.

2.10 Conclusion

Corps of Engineers are always seen at the forefront to providing peacetime services for nation. Since independence, Corps of Engineers have been making a sizeable contribution in the National development, I.e. construction of Karakoram Highway, Khanpur Dam, Makaran Costal Highway and various mega projects. The construction of western route of CPEC in Baluchistan areas was a test of Corps' professional capability, it was also completed before estimated time.

The Sappers not only performed in national infrastructure development, they also played leading role in the relief and rescue operations during any emergencies and natural calamities. Corps of Engineer's troops have been participating in floods management operations as a first responder in pre/post floods response like planning, rescue, relief, and rehabilitation and reconstruction activities since independence.

CHAPTER: 3

Pakistan Army Corps of Engineers and the Development of North-West Tribal Areas (Post 9/11)

3.1 The North-West Tribal Areas: An Appraisal

The North-West Tribal Areas of Khyber Pakhtunkhwa is a vital portion of the country; so it is totally different on the basis of administrative and political system as analyzed to the other parts of country. The North-west tribal belt of Khyber Pakhtunkhwa ex-Federal Administrated Tribal belt, enjoyed strategic importance and old historical status between Pakistan and Afghanistan border line. North-West Pak-Afghan border line is called was established Sir Mortimer Durand in 1892.[73] The tribal belt consist of about 2500 kilometers long border between Pakistan and Afghanistan from north to west.[74] North-West Tribal Areas shared 27220 square kilometers. According to the statement 1998 census tribal areas have about 3.2 million population.[75]

Post partition various regions signed agreements with government of Pakistan. In 1948 tribal territories has given special administrative status granted the tribal territories a special administrative, Malakand, North Waziristan, South Waziristan, Kurram and Khyber was existed in 1947 the Mohmand Agency was added in 1951, Bajaur and Orakzai Agencies in 1971.[76] Under constitution of Pakistan 1973 Article 247 tribal belt divides the into seven semi-autonomous administrative parts were called Agencies, South Waziristan, North Waziristan, Kurram, Orakzai, Bajaur, Mohmand and Khyber including six Frontier Regions (FRs), the small tribal areas that related upon the tribal agencies and the settled districts of Khyber Pakhtunkhwa.[77] The Frontier region of Peshawar, Kohat, Tank, Bannu, Dera Ismail Khan and Lakki was included in tribal administrative system. The representation of tribal belt in parliament but Governor of

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[73] Azmat Hayat Khan. "The Durand line; Its geo strategic Importance*," Peshawar: Area study center Peshawar University*, 2000), xvii.
[74] Rizwan Hussain. *Pakistan and the Emergence of Islamic Militancy in Afghanistan* (Burligton Vermout: Ashgate Publishing Limited, 2005), 36.
[75] *Census Report of FATA,* Islamabad; statistic division Government of Pakistan, 1998, 1
[76] *History of FATA*, http:// www fata.gov.pk retrieved 13 July. 2019.
[77] *History of FATA*, http://www.fata.gov.pk retrieved 13 July. 2019.

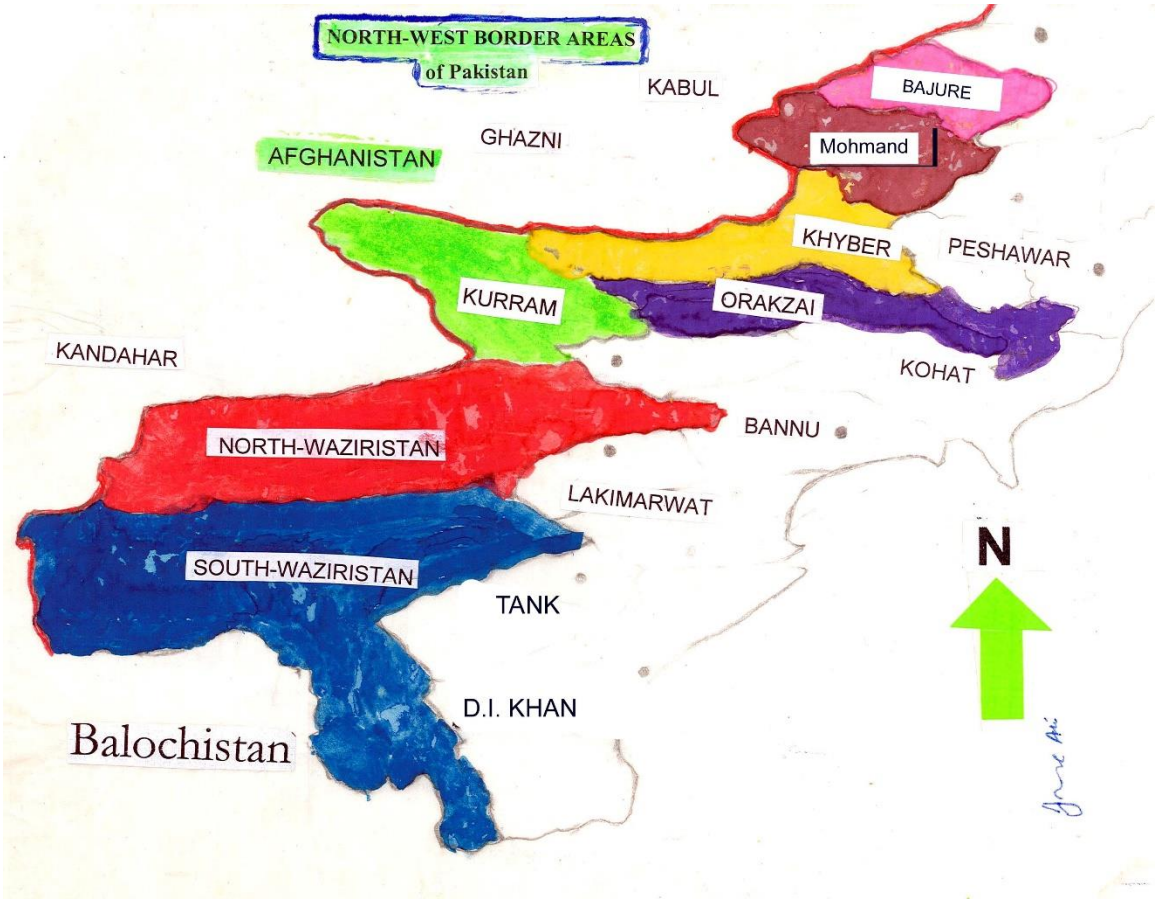
Khyber Pakhtunkhwa under the direct executive powers given by Federal Government. Federal Administrated Tribal Areas were ruled over the Frontier Crimes Regulations (FCR) "series of laws enacted in 1901 by the Lord Curzon, the then viceroy of India."[78] The black law (FCR) was criticized at different occasions but some bureaucrat, beneficial feudalist and diplomats become hurdle in way of legislation. According to their arguments the existing administrative system was most effective tool for tribal disputes regulation.

FATA have enjoyed a special status in all, 1956, 1962 and the 1973 constitution these constitution has provided special powers of legislation were given to the President to make, repeal and amend any regulations for the whole or any part of these areas.[79] Since Independence every coming government has been seriously ignored only some amendments to the FCR law approved to increase adult franchise to the tribe people and they enable to elect own candidate in National Assembly. [Another initiative has been taken in 2002 under Pervez Musharraf Government, the development and planning responsibility delivered to provincial government of NWFP. Civil Secretariat (FATA) was established in 2006 with an additional chief secretary, four secretaries and many directors.[80] The Political Parties Order was extended till 2011, FATA to allowed political parties. Even with these extensions the political representation of Tribal areas in the National Legislature remained inconsequential, with the result the FATA continued to reel form the old unjust system. Pakistan Muslim League Government nominated parliamentary committee to look after the procedure of political reforms in Tribal Areas. The main objective of committee to replace the (FCR) black laws, committee finalized their recommendation and there are two options first north-west tribal areas merged into Khyber Pakhunkhwa or given the status of separate province. The Nawaz Sharif government allies opposed the merger into KPK province.[81] Parliament approved the 31 constitutional amendment bill in May 2018 the Khyber Pakhtunkhwa Provincial Assembly has passed historical (FATA) merged bill with 2/3 majority in May 27, 2018,

[78] Rahim Ullah Yousaf Zai, "Accord and Discord*" The News Islamabad,* October, 2006.
[79] Ibid.
[80] *Administrative System Federally Administrated Tribal Areas* (Government of Pakistan 2017), http://www.fata.gov.pk, Accessed on Dated ,29-09-2019
[81] Farooq Yousaf," FATA Tribes: Finally Out Colonial Clutches? Past, Present and Future." *Journal of Center for Research & Security Studies* (June 2018): 12.

after President of Pakistan, signed the 31st Constitutional amendment became law FATA merger into Khyber Pakhtunkhwa Province.[82]

Figure. 2: Map of Tribal Areas



Source: (Modified) Arif Muhammad Khan, The Challenges of Transforming FATA (The role of Governance), 162.

[82] Yousaf, "FATA Tribes: Finally Out Colonial Clutches," 45.

3.1.1 People of the Tribal Areas

North-West Tribal Areas have rich ethnic diversity and strong tribal system all tribe in north-west border areas associated in one way or another. These tribes have own traditional system and separate socio-cultural status. All tribes are consist of different clans, sub-clans and Khels, with each led by its own khan or chief while the main tribe have a prime Malik, or chief.[83] There are 11 major tribes and several sub-tribes such as Afridi, Wazirs, Bangash, Shinwari, Utnankhel, Tarkan, Mohmand, Safi, Orakzai, Turi, Dawar, Shelmani, Mulagori, Masozai, Saidgai, Mehsud, Bhittani, Utmanzai, Haleemzai, Salarzai and Ahmadzai.[84]

Wazirs, Mehsuds, Dawars and Bhittanies. Wazirs live in North and South Waziristan district, Dawars are only the inhabitants of central cultivatable green part of North Waziristan. Turi, Masuzai and Bangash bistable in Kurram area. Safi, Uthmankhel, Tarkani and Mohmand are living in Bajaur and Mohmond districs. Shinwari, Shilmani, Afridi, malgori and Orakzai are occupied in Khyber and Orakzai districts. The people of North-West Tribal Areas of Khyber Pakhtunkhwa are almost Muslims, with some minority of Sikhs and Hindus. The common language of all the tribes is Pashtu.[85] The majority population of tribal belt are linked with agriculture related occupation like livestock, forming, gardening, some people depend on trading, mining, transport and other employments.

3.2 Root Causes of Militancy/Insurgency in Tribal belt

There are various physical and attitudinal elements which were involved to promote insurgency in north-west tribal territory of Pakistan. Since independence, such areas have been facing low socio-economic condition, illiteracy, lawless society and other internal and external issues. Post 9/11, such factors helped to promote extremism and anti-state activities. Following root causes are mostly discussed.

[83] Yousaf "FATA Tribe: Finally Out Colonial Clutches." 44.
[84] Ibid, 45.
[85] Mumtaz Ali Bangash," The political Administration of Tribal Areas; A Historical Organizational Perspective," *Study Centre Central Asia University of Peshawar* (1998):

3.2.1 Administrative and Political errors

Hence independence the British implement system remain intact in north-west tribal areas any civil and military governments could not established proper democratic system in tribal region. Poverty, lawlessness, illiteracy and bad governess increased with the passage of time situation become more critical. The FATA political and administrative structure completely inhuman and undemocratic system imposed on tribal regions to control the outlying territory. With the passage of Government of Pakistan should reform and developed the tribal areas governess system to insure the state writ in the region. Post 9/11 Pakistan loosed the control of north-west border areas because of ineffective administrative system. This lawless and backward region was become safe haven for inter and external militants.[86] Militants not only changed the political scenario (from Malik to Mullah) very easily but also controlled the young tribesman. There many administrative and political error was existed in the system that are serious reasons of instability and conflicts.

3.2.2 Inhuman justice System

From independence the ex-Federal Administrated Tribal Areas were governed by inhuman and undemocratic law Frontier Crimes Regulations. Governments of Pakistan extended the rights and privileges to Maliks and autonomy of the region which in return pledged loyalty to Pakistan.[87]The basic right of an equal lawful trial, such as right to the legal counsel, the right to appeal and the law of evidence has not provided during trail. The Frontier Crimes Regulation in Federal Administrated Tribal Areas was debate over various forums but many civil bureaucrats feudalist politician suggested that it most effective system to execute with getting people assent and this system of Jirga is a traditional conflict resolution mechanism, it's a key to resolve tribal disputes.[88] Post 9/11, rise the militancy in north-west border areas of Pakistan, different militant outfits have gained unprecedented influence in region.[89] In the starting, militant organizations in north-west border areas has assumed animate speedy justice against the strong criminal

[86] Rana, *Dynamics of Taliban Insurgency in FATA*, 168.
[87] *Modern History of FATA* Sep 29, 2019.
[88] Rahim Ullah Yousaf Zai, "Accord *and Discord*" *The News,* October, 2006.
[89] Muhammad Amir Rana, "*Taliban Insurgency: A Counterinsurgency Perspective,"* 16

and tribal elements. The innocent people accepted them as their Ameer and an anti-dote to a corrupt and defunct political system, the Taliban showed their true colors. Militant has succeed to create a state within state and established an equally judicial and administrative intersystem in own controlled areas.[90] Militants killed government's legal political agents and Maliks gradually, militant leadership filled the local administrative vacuum and challenged state writ. Taliban groups increased their power with the support of the common tribesman through their sharia narrative.[91]

3.2.3 Socio-Economic Inequalities

The North-West tribal areas are among the least developed part of the Pakistan, around 60% of its population lives below the national poverty line. Per capita income very low as then other areas, whereas per capita public development expenditure is reportedly one-third of the national average. The ratio of literate persons is estimated to be 17.42 percent, of which less than 3 % are woman.[92] Because of poverty, absence of awareness and employment opportunities and lured by free education they offer, people choose to send their children to madrassas, mostly which are under the direct or indirect influence of Taliban. Natural resources are unutilized in north-west tribal areas and the main sources of revenue generation are limited mostly people depended on agriculture, livestock, forming, transport, arms manufacturing and trade, drug trafficking, cross-border trade, smuggling and domestic retail business, such as shop keeping[93]

The development policy of the local administration in ex-FATA is based on biased distribution of resources. The privileged are provided with development incentives while those who harbor grievances and raise their voices against the suppressive system of governance are ignored and kept under-developed.[94] Pre and after independence landlords, maliks and feudalists are beneficiary of old implement system. The poor socio-

[90] Rohan Gunaratna and Adnan Shah Bukhari, "Making Peace with Pakistani Taliban to Isolate Al Qaeda: Success and Failure, *"Peace and Security review*, Vol. 1, No. 2, (Dhaka: BIPSS, 2008), 3.
[91] Naqvi, Khan and Ahmed,"The Impact of Militancy on Education in FATA," *Tigha, a Journal of Peace and Development, Islamabad*, vol. 2 (2012):
[92] Naveed Ahmed Shinwari, *Understanding FATA: Attitude Towards Governance, Religion and Society in Pakistan*, 18
[93] Muhammad Amir Rana, Safdar Sial and Abdul Basit, *Dynamic of Taliban Insurgency in FATA* (Lahore: BPH Printers, 2013), 121.
[94] Naveed Ahmed Shinwari, *Understanding FATA*, 19.

economic and development context helped militants in north-west tribal areas in many ways. Taliban commanders interning into Pakistan after 2001 instantly started providing financial incentives to tribes and influential tribesmen in a bid to ensure tribal support which is vital for shelter and logistics.

Approximately majority of the north-west tribal areas population depended upon agriculture directly or indirectly livestock and forming sector has suffered badly amid the raging militancy.[95] Because of the limited resources, a sense of deprivation and injustice, low employment and high level poverty, the local youth have fallen prey to the militants' persuasion. There are around 80,000 unemployed youth between the ages of 18 to 25 years.[96] Militancy does not originate from poverty; however, poverty makes the land fertile for militancy. Poverty, especially vulnerable to being janissaries and mercenaries. The militants, recruitment offers money to by the youngsters who are lured by excitement, adventure, promise of identity assertion and financial security.[97] The militant organizations providing financial support to fighters, In case a militant died during militant activity the militant organization provide financial support to his family. External agencies are also involved in both direct and indirect activities of insurgency in tribal areas provides fighting equipment and financial support to the militants.

Tehreek-e-Taliban Pakistan (TTP) militants have proven adept at generating financial resources. Besides enforced 'taxes' and kidnapping for ransom, they had full control of natural resources in certain areas of ex-FATA and Khyber Pakhtunkhwa. They were controlled by Mohmand's marble mines and timber mafia in Swat.[98]

3.2.4 External Factors

During Soviet-Afghan war from 1979 to 1989 the north-west border areas of Pakistan used as a base camp against communism. America and its allied countries Saudi Arabia and Europe provide aided to Pakistan for generating Jihadi organizations and its recruitment center in North-West Frontier Province. The Islamic Jihad mindset produced

[95] Tahir Ali," The Crippled FATA Economy, "*The Dawn* (November 16, 2009)
[96] Khalid Aziz, "Causes of Rebellion in Waziristan," *Criterion Magazine* (April-June 2007):
[97] Ejaz Akram and Nauman Hussain," Understanding the Causes of Militancy in Pakistan's Frontier," *Margalla Papers* (2017): 147.
[98] Rana, *Dynamics of Taliban Insurgency in FATA*. 167.

in this period, USA and her allies enable to push out Soviet forces from Afghanistan. After the withdrawal, American government changed own policy to South Asia and leave from Afghanistan without future plan. It was the suitable environment for mujahedeen groups to promote own work in the directionless Afghanistan. Pakistan and Saudi Arabia have provided diplomatic support to new originated group of mujahedeen in Afghanistan, hoping to settlement the civil war. Whole Islamic mujahedeen including Pakistan were linked with the Afghan Taliban direct or indirectly and finally, created the phenomenon of Taliban in Pakistan as well.[99]

The superpowers involved their intelligence agency sources to pursue their regional interests in the South Asia from different ways. USA and India want to change the direction of Taliban and other Jihadi organizations from fighting in Afghanistan and Kashmir by engaging them in Pakistan. This would decrease the pressure over their forces in the mentioned areas. It believed that is one of the cause for originate militancy in tribal areas and Swat.[100] Owais Ahmed Ghani the former Governor of Khyber Pakhtunkhwa was quoted as saying in May 2008 that "Baitullah Mehsud, most prominent militant commander in Pakistan's restive tribal areas, who had been heading the Tehrik-e-Taliban Pakistan was spending around Rs. 3 billion on militancy annually, particularly on procuring weapons, equipment, vehicles, treatment of wounded militants and assistance for the families of killed militants."[101]

Therefore north-west tribal belt converter into base camps and training grounds of American supported Afghan Mujahedeen, who also used these areas for different tactical purpose such as providing medical aid to their wounded Afghan freedom fighters. American bloc top priority to pursue their objectives in any cost in Afghan-Soviet war. Imran Khan Prime Minister Pakistan has said in the forum of Council on Foreign Relations during his visit to participation in the Session of UN General Assembly 2019. "Those Persons who are create and promote mujahedeen against Soviet Forces in

[99] Rana, *Dynamics of Taliban Insurgency in FATA*. 167.
[100] Tabassum Majeed, *Insurgency in Swat: Conflicts Settlement and Peace Building* (Swat: Shoaib Sons Publisher, 2016), 59.
[101] Daily *Times Lahore* May 30, 2008.

Afghanistan as per Islamic (Jihad) Ideology post 9/11 incident, they called terrorists and Western Countries, its nexus was connected to Islam."[102]

3.2.5 Changed the Socio-Political Scenario of Tribal Areas

Militancy has left deep effect on the social structure of tribal society. After 9/11, the traditional tribal structure of [north-west tribal areas] was disturbed by emerging militancy and militant organizations…Traditionally, the Malik (tribal elder) and hujra (guesthouse), has played fundamental role in tribal political and social life. But after the rise of militancy Mullah and Mosque replaced the value of hujra and Malik.[103]The age-old traditional tribal structure of Maliks was also greatly damaged in the process. The militants deliberately killed the pro-government political agents, government-backed Maliks to defeat the traditional sources of authority and consolidate their grip in these areas. That strategy has gradually undermined the status and efficacy of the traditional structure that had been prevalent in the tribal society for centuries until the post-9/11 onslaught of militants.[104] The militant organizations about 1500 pro governmental political agents and Maliks has killed in different ways and destroyed the existing system.

The growing influence of militant organizations has also diminished the role of the Pashtuns, popular, dispute solution system of tribal Jirga, or council of tribal elders, that held the stature of a court in the tribal areas. Traditionally all the problems in the Pashtun society have been resolved through the Jirga at the community level. In many parts of the tribal areas, Jirga's has been affected by the killing of tribal elders and displacement of large sections of the population.[105]

[102] Prime Minister Pakistan Imran Khan, Speech in Council on Foreign Relations, online Talking on Pakistan Television (September 23, 2019)
[103] Shuja Nawaz, FATA-A Most Dangerous Place; Meeting the Challenges of Militancy and Terror in the Federally Administrated Tribal Areas of Pakistan (*Washington: Center for strategic and International Studies*, January 2009): 26.
[104] ICG Asia Report No, 164, "*Pakistan: The Militant Jihad Challenge*", (March 13, 2009): 5.
[105] Mehmmod Khan, *The Challenge of Transforming FATA*, 28.

3.3 War-on-Terror in Tribal Areas and Counterstrategy of the Government

Pakistan used north-west tribal areas as a buffer zone between itself and Afghanistan, and so long as troubles remained confined to tribal areas, they did not concern the government deeply. That situation has changed now with violence and militancy flowing over into the settled areas.[106] The Pakistan's militants organization Tehreek-Taliban Pakistan have gone through rapid transformation in term of strategy, chose of targets, tactics and operation since 2001. Initially, they focused on providing human resources and assistance, such as provision of shelters to local and foreign militants, fighting in Afghanistan against US-led international forces while being based in Waziristan in Pakistan's Tribal Areas bordering Afghanistan. At the same time they continued to expand their area of influence, financial strength and support base among the local tribes on the basis of ideology, tribal ethnics and religious affinity. The local support factor and the state lax response encouraged them to march on from one tribal agency to another. Besides undermining the tribal administrative and traditional socio-cultural system, they continued to challenge the writ of the state expanding their targets and launching attacks with insurgency brutality.[107]

Eventually, they expand across tribal areas multiplying their human resources, strengthening their infrastructure, terrorizing the people, to conform their ideology and demoralizing Pakistan's security forces**.** The wave of militancy and terrorism has left a deep impact on almost all walks of life in the north-west tribal areas of Pakistan. These areas are not only a conflict zone but chaos and disorder also characterizes its basic institutional structure.

[106] Shuja Nawaz, "Federal Administrative Tribal Areas A Most Dangerous Place: Meeting the Challenge of Militancy and Terror in the Federal Administrative Tribal Areas of Pakistan," *Center for Strategic and International Studies* (January 2009): 20.
[107] Shuja Nawaz, "Federal Administrative Tribal Areas A Most Dangerous Place: Meeting the Challenge of Militancy and Terror in the Federal Administrative Tribal Areas of Pakistan," *Center for Strategic and International Studies* (January 2009): 20.

3.3.1 Major Military Operations to Control Militancy in Tribal Areas

The 'Operation Al-Mizan' was launched by Pakistan armed forces, the first major military operation on September 2002, against the militant located Darra Akakhel in North Waziristan. Pakistan Army called such action in Darra Akakhel, which lasted for three days, a "routine military exercise".[108]

Pakistan Armed forces launched the first full-scale military operation in Wana, the head quarter of South Waziristan, in March 2004. Military and militant both claimed their success in such operation but according to official report, the 63 foreign militants were killed and 166 terrorists, including 73 foreigner militants were arrested.

Another full-flag operation was started by Pakistan Armed Forces against terrorists in North Waziristan on September 2005. The troops launched an operation on January 23, 28 and 29, 2008 in South Waziristan including Torwam, Tiarza near Shakai, Ladha, Shakai and Nawaz Kot against Baitullah Mehsud and his fellows.

Operation Sirat-e-Mustaqeem was launched in (Bara) Khyber in June 2008 and pushed out the Lashkar-e-Islam terrorist and their supporters. Military operation, named 'Operation Sher Dil' was launched against militants in Bajaur Agency in August 2008 and initially aimed at counter terrorists gathering in Khar, the headquarter of Bajaur. Another major military operation Rah-e-Nijat was launched in 2009 in South Waziristan with over 30,000 troops against Tehreek-e-Taliban Pakistan militants. Operation Rah-e Nijat continued in 2010. Security Forces claimed dislodging militants from their strongholds in South Waziristan.[109]

Military Operation Koh-e-Sufaid was launched in July 2011 to clear Kurram Agency from militants. The security forces were still underway at the end of 2010. Militants scattered into other parts of tribal areas. During years 2011, Pakistani armed forces launched various small and medium scale operations to counter the militancy in tribal belt. Such Pakistan's security forces operations continued in 2012 aimed to maintain siege on terrorist organizations.

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[108] Muhammad Air Rana, Safdar Ali and Abdul Basit, *Dynamics of Taliban Insurgency in FATA*, 120.
[109] Ibid, 173.

Military operation titled Operation Khyber was launched in 2014 with continued series, against militants around Khyber Agency. Another full-fledged military operation Zarb-e-Azab was launched in June 2014, the operation was going on ground levels and supports of Pakistan air force. Aimed to break the hideouts and communication network through targeted operations. Pakistan security forces successfully achieved their targets against militancy during such operations.[110]

Operation Radd-ul-Fassad was launched in February 2017 by Pakistan's security forces. Such operation is still continuing. Pakistan army has carried out 9,000 intelligence-based operations throughout the country. With the completion of three years of Operation Radd-ul-Fassad, the Inter Services Public Relations stated that, "the security forces and intelligence agencies backed by the nation have achieved unparalleled success in Operation Radd-ul-Fassad at a monumental cost paid in men and material… the army is aware and capable of thwarting all threats to the security and sovereignty of Pakistan irrespective of the coast."[111]

3.4 The Services of Army Corps of Engineers in the Development of North-West Tribal Areas Post 9/11

The socio-economic indicators prove that tribal areas, mostly neglect and regressive region. Since independence there is no major project were not planed, even British Indian era. Post 9/11 the north-west tribal areas has badly affected due to ongoing war-on-terror for a decade. The cost of militancy in the tribal areas post 9/ 11, on account of destruction of infrastructure, loss of human lives and impacts on economic activities have been Rs. 171,671 million or US$ 2,146 million.[112]

The local employments, industries, agriculture, livestock and trade has been severely crippled. The government and business community struggles to restore in a volatile

[110] Saima Ghazanfar, "Operation Zarb-e-Azab Two Years of Succes", *The Nation* September 06, 2016 Accessed on October 25, 2019, from http://www.nation.com.pk.
[111] "*Operation Radd-ul-Fassad Completes three years, DG ISPR pays tribute to martyrs",* Accessed March 3, 2020, from https://www.aaj.tv.
[112] Abdul Basit,"Life in FATA Aimed Ongoing Conflict," *in the Dynamics of Taliban Insurgency in FATA*, ed. Muhammad Amir Rana and Safder Sial (Lahore: BPH Printers, 2013),149.

instable situation where their sales have fallen considerably.[113] Images of militancy, lawlessness, poverty and isolation but the signs of change are dawning on north-west tribal areas and its poised to become a developed and peaceful area not only Pakistan but for the region.[114] It is realty, past governments has not given due priority of development for tribal regions. There are many developmental projects have been launched from 2009 in north-west tribal region, to elevate education, health, infrastructure, communications, industry and irrigation many developmental projects have been launched in the tribal territory to improve the living standard of people.[115] The Khyber Pakhtunkhwa and federal government decided to undertake development projects in the districts on top priority basis. Pakistan army officials discussed with Federal Administrative Tribal Areas Secretariat. They highlight three main sectors which included communication infrastructure, water supply, irrigation and electricity. The communication infrastructure of north-west tribal areas was also badly disturbed due to flood, 2010.

United State and United Arab Emirate governments offered to support in social development of the war on terrorists and flood affected areas of Malakand division and Tribal area. The works under this support were named as Quick Impact Projects QIPs and UAE-Pakistan Assistance Projects (UPAP) was launched in 2010. There various project has been started in different sectors on immediate bases like, education, health, communications infrastructure, water and power. The rehabilitation/reconstruction project of North-West Tribal Areas and Swat was started under Pakistan Army's strategy of winning hearts and minds through peace, security and stabilization in the region.[116]

3.5 Corps Contribution in Communication Sector Development of Tribal areas

Pakistan Armed Forces also focused its attentions on the execution of development projects with a view of ensuring basic amenities of life to tribesman. Besides they made valuable contribution in the repatriation of 91 percent of Temporary Displaced People

[113] *Daily Ummat* (*Urdu) Karachi*, October 15, 2009.
[114] Rana, *Dynamics of Taliban Insurgency in FATA*, 167.
[115] Hussain Qazi, *The News International*, October 31, 2013.
[116] Muhammad Waseem, "Building Peace Social Sector Development in FATA and Malakand Division," *Corps of Engineers Journal* (2014): 66.

families. Corps of Army Engineers troops constructed roads, school, vocational center, hospitals and other need based projects in war-on-terror affected areas of tribal belt. According to the Inter Services Public Relations during military operations around 336,042 families abandoned homes but with the efforts of armed forces and civil administration, 306,339 families returned to its homes.[117]

Post 9/11[the Corps of Engineers construction arms the Frontier Works Organization] constructed the 673 kilometers carpeted roads, 19 main bridges and many tunnels throughout the tribal region to enhancing communication links and facilities in the remote tribal areas. In the health sector the armed forces renovated already existing district headquarters hospitals, Tehsil headquarter hospitals and other health units.[118]

3.5.1 Reconstruction of Tank to Makeen Road through Jandola

The 110 kilometers long road linked Tank with Makeen through Jandola. The project was started in February 2010, undertaken by Army Engineers Battalion. In spite of hostile environments, it is one of the Quick Impact Projects started for the development of South Waziristan with the help of United States Agency for International Development (USAID) program. The Jandola and Ahmad Wam tunnels were also improved and widened to suit the standard of the road. A 360 meters long and 8.40 meter wide bridge at Jandola on Tank Zam River. The important crossing point will facilitate the commuters, especially during monsoon season when heavy flow of water becomes a formidable obstacle. The law and order situation in the area was a great challenge; however the project was completed in October 2012.[119] This road brought development and prosperity in South Waziristan and also provides easy and fast access to other areas.

3.5.2 Bannu-Miran Shah to Ghulam Khan Road Project

It is one of the important trade routes which provides road link to Afghanistan and further to Central Asian States. The Federal Administrative Tribal Areas Secretariat awarded this contract to Frontier Works Organizations. The work was started by 493 Engineers group

[117] Shamim Shahid, *Armed forces Contributed in uplift of Waziristan* July 21, 2017. www.pakistantoday.com.pk.
[118] Ibid,
[119] Frontier Works Organizations, *Newsletter Projects News* (2014)

in September 2011. The 82 kilometers long road was completed as a part of the United States Agency for International Development (USAID) program Phase-II. The Northern branch of Central Trade Corridor, Bannu to Miranshah-Ghulam Khan route passes through the prominent towns of North Waziristan. This road passing through the Tochi Pass was preferred route between the two countries that is also a part of Trade of Corridor.[120] The 'New Trade Corridor' from Pakistan to Afghanistan reduces the distance between Karachi to Kabul by 400 kilometers compared to the Khyber Pass route. The traffic for the huge landlocked region of Afghanistan and Central Asia Republics will conveniently pass through this quiet road to join the Indus Highway. Completion of 2200 kilometers long Afghanistan ring road connecting major Afghanistan cities i.e. Jalalabad, Islam Qilla, Kandahar and Kabul will further facilitate international trade and travel, and the biggest spin-off will be the livelihood revolution and economic prosperity for tribal belt in especially and for all the neighboring countries in usually.[121]

The Bannu-Miranshah-Ghulam Khan Road becomes a great trade route in the region, fast and comfortableness journey between Bannu to Tribal areas will also help in sharing the fellow on Tuukham and Chaman crossing points. This route brings prosperity through connectivity and socio-economic activities. The populations of North Waziristan are very happy because Government of KPK and Pakistan Army is committed to provide better facilities and job opportunities in Tribal areas.[122]

3.5.3 Reconstruction of Tank to Gomal-Tanai-Wana Road

The project of up-gradation, widening and reconstruction of this road was started by Army Engineers in October 2011. The road has 6 meters of carriageway, 1.5 meter shoulders and 105 kilometers long linked huge population of South Waziristan. This road is going to have a very positive impact on socio-economic condition of the area. The reconstruction of this road in difficult and critical law and order situation was a great achievement of army engineers, work has completed in June 2012. It provides roads links for integral part of the overall tribal belt short and direct connectivity among Derra Ismail

[120] Frontier Works Organization, *Newsletter*, 2014.
[121] Hassan Qazi, *The News International* October 31, 2013.
[122] Interview with Qammar Zaman Zakar Khel on December 5, 2019.

Khan, Pezu, Jandola, Gomal, Tanai and Wana. The road section is extremely important to security forces in South Waziristan district, fast and comfortable journey and trade. [123]

3.5.4 Construction of Wana-Shakai to Makeen Road

The project of reconstruction and widening of this important road is linked between Wazir and Mehsud tribal area which was awarded by FATA Secretariat in December 2011. The project was financed by USAID and constructed in accordance with National Highway Authority standards. Up gradation of South-North lateral between Wana and Miran Shah headquarter of South and North Waziristan areas. It was long standing appeal of the tribesman's. The road has not only increased the accessibility to North-South Waziristan's remote tribal areas but generated a lot of economic opportunities for the tribesmen through improving market access. This road serves as a lateral of the Central trade Corridor.[124]

3.5.5 Construction of Wana to Angoor Adda Road

It is a vital trade route in South Waziristan which starts from Wana and ends at Angoor Adda, located on Pak-Afghan border. The United Arab Emirate has funded project was started by 493 Engineers group Frontier Works Organization in April 2011. It passes through difficult mountainous terrain, which remains under snow during winter season. The 25 kilometers length out of 50 km road between Raghzai and Nizh Narai passes through craggy mountains ranging between 46,00 feet to 86,00 feet above sea level.[125]

The Khyber Pass and Quetta-Kandahar route through Bolan Pass constituted the two access ways to Afghanistan and Central Asia States but now both the neighbors have new land links through the Derra Ismail Khan-Wana-Angoor adda Road. The land route passing through the snowcapped mountains of Waziristan and traversing the historic Gomal Pass, which was closed by British after the 1st Afghan War. The road not only showcases the beauty of the once forbidden frontier but has initiated significant economic activity all along. The project enhanced communication shell reducing internal rivalries

[123] Muhammad Azhar Munir Khan," construction of Road Tanj-Gomal-Wana", *Corps of Engineers Journal* (2011-12): 64.
[124] Frontier Works Organizations, *Newsletter* 2015.
[125] Frontier Works Organization, *Newsletter*, 2015.

by facilitation interaction amongst the tribesmen whereas law and order situation will be improved through greater accessibility and logistic support.[126]

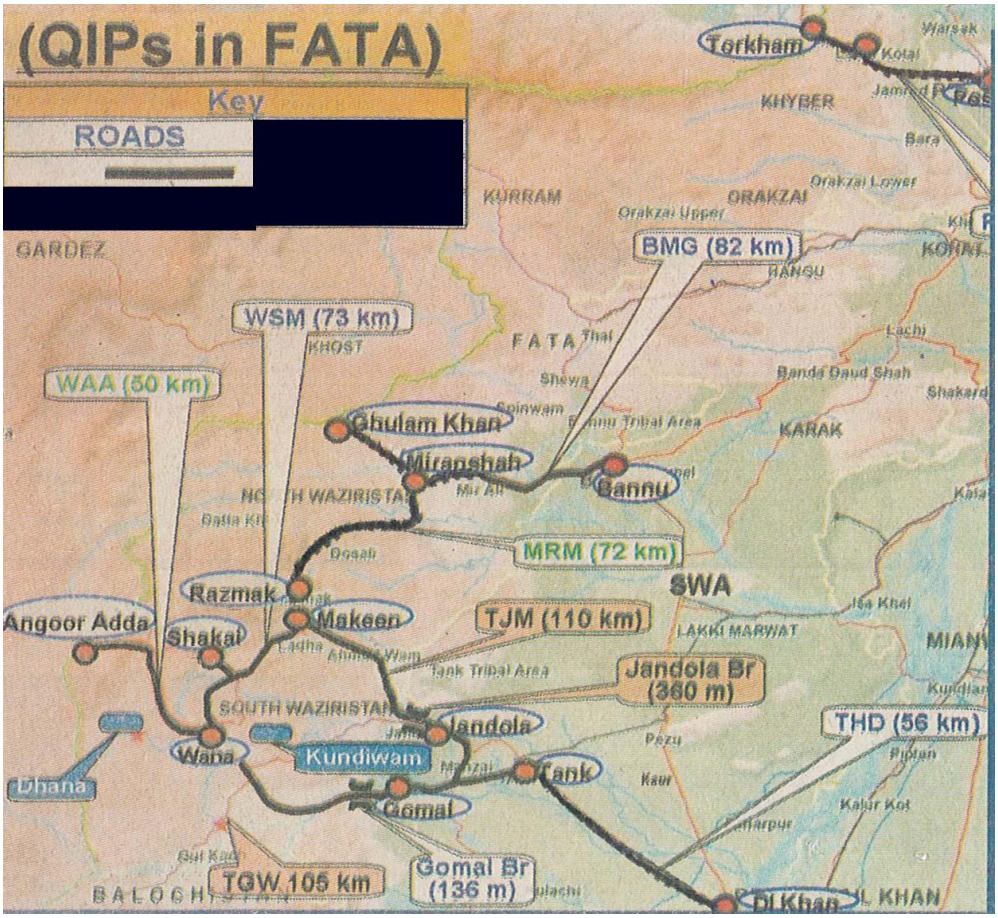
3.5.6 Ghallanai to Mohmond Ghat Road

The project of Ghallanai-Mohmond Ghat road was started in November 2013, undertaken by Engineer Group (Frontier Works Organizations). The road which which connects Bajaur with Mohmond also leads to Charsada and Peshawar. The 45 kilometers long route also linked Pakistan with Kunnar Province of Afghanistan through Nawa Pass. This road was specially designed for heavy traffic. The dangerous gradients of Nahaki Mountains are being avoided by construction of 751 meters long tunnel.[127] It's facilitated the local population by making the journey faster and safer but also ease out the heavy and loaded traffic. This project not only provided connectivity among the people but also brought peace and prosperity through trade in the area. The marble industries created new job opportunities in these districts. The high quality marble carried out through this route to Peshawar and Islamabad markets.

[126] Hassan *Qazi, The News International*, October 31, 2013.
[127] Frontier Works Organizations, *Project News*, 2017.

Figure. 3

Map of New Reconstruction Roads in Tribal Areas under (QIPs)



Source: The News International Islamabad, October 31, 2013.

3.6 Army Engineers Contributions in Water and Power Sector in Tribal Areas

Federal Government and Khyber Pakhtunkhwa have focused to develop water and power sector because the major population of tribal areas connects with cultivation. During war-on-terror, energy sector was completely demolished Army Engineers not only repaired transmission lines and upgrades the Wana Grid Station. Many small and medium dams were identified for construction in North-West Tribal belt of Khyber Pakhtunkhwa. The Corps of Engineers have completed some projects I.e. Gomal Zam Dam and Dhana

irrigation and water supply scheme. The new water projects bring prosperity in the region.

3.6.1 The Construction of Gomal Zam Dam in South Waziristan

Gomal Zam Dam is located on Gomal River at Khajuri Kach in South Waziristan District is situated west of the Tank and Derra Ismail Khan district of the Khyber Pakhtunkhwa Province. The need for storage of water of Gomal River was observed at the time of settlement of Derra Ismail Khan.

The project went through many ups and downs, project was approved in 1957 and basic works were completed by Provincial Irrigation Deportment. In 1959, the scheme was transferred to Water and Power Development Authority and project was again approved in 1963. Constructions of access roads, accommodation for staff and labor were completed by Water and Power Development Authority in 1965. In 2002, the project was awarded to Chinese company but work was suspended due to abduction of Chinese engineer in 2004. The project has been awarded to Frontier Works Organizations in March 2007 and work was started in June 2007.[128]

The project of 433 feet high curved gravity type roller compacted concrete dam was completed in 2010. The main purpose of this projects were to improve lined canal irrigation system and about 17.4 megawatts generation of hydropower. It has effectively controlled flash floods which caused large scale devastation in the past. Beside the socio-economic opportunities, it is a significant boost for environment and tourism. The multipurpose dam has the capacity of 300 million cubic meters water, 800 million cubic meters a live storage and flood retention storage of about 300 million cubic meters. It provides 17.4 megawatts electricity, to more than 25,000 households in South Waziristan and provides cheap electricity to National Grid through Tank Grid Station. Irrigation component comprises of head woks, 60.5 kilometers long main canal and 17 distributaries with total length of 204 km. It's irrigated 163,000 acres of land in Derra Ismail Khan and Tank districts and brings prosperity in the area.[129]

[128] Shabbir Ahmed, "Gomal Zam Dam Project*," Corps of Engineers Journal*, (2008): 57.
[129] *Pakistan Observer Islamabad,* October 31, 2012.

3.6.2 Rehabilitation and Upgrading the Wana Grid Station

The 493 Engineers Group has completed the upgrading project of Wana Grid Station from 66 KV to 132 KV and laying of transmission line from Gomal dam to Wana, which was severely damaged during insurgency.These projects were completed in December 2013 under difficult situation. Frontier works organizations workforces also rebuild the 11 KV feeders from jandola-Sararogha-Jannata to Ladh and 33 KV feeder from Jandola-Chaghmalai-Barwand for providing electricity to many villages of remote areas in South Waziristan.

3.6.3 Dhana Irrigation and Water Supply Schemes

Dhana Irrigation System is located few miles east from Wana to Angoor Adda Road near Sholam. Its main purpose is to harness seasonal runoff to provide additional water for irrigation. However, it is not only providing portable water for natives but it's also conserved and recharge ground water table. It is designed to irrigate the catchment area of 13,000 acres. It has a main weir which is 150 meters wide and two main canals of right and left banks. The right bank canal is 4549 meters long with the capacity of cusecs, and the left canal is 4214 meters long with the capacity of 700 cusecs. The irrigation scheme also helped in the checking recurring floods in the areas.[130]

Clean drinking water is the essence of life; its importance can be well understood by the fact that the poor people of Tribal Areas daily travel long distances in rugged mountains to reach natural water resources. The government's top priority to provide clean and drinking water to the tribal population. There are 64 water supply schemes with the total cost of Rs. 500 million were completed over 100 villages. About one million population is dependent on these water supply schemes. Women and children of these villages no longer have to toil hard for this basic necessity of life, as clean drinking water is now available in the village with proper delivery facilities.[131] Agricultural activates are bring job opportunities for locals and made the large amount of arable land could be cultivation. These live hood projects have been implemented to assist locals establish micro-businesses like cattle, fish farming and honey bees forming.

[130] *Frontier Works Organizations, Newsletter* 2015.
[131] *Corps of Engineers Journal* (2014): 72.

3.6.4 Kurram Tangi Multipurpose Dam project

The main Kurram Tangi Dam project is located across Kurram River at 14 KM U/S Kurram Garhi Head Woks and 32 KM North from Bannu City in North Waziristan district**.** The Kaitu Weir stage I on across Kaitu River witch located near Spinwam 28 KM from Tehsil Headquarter Shewa of North Waziristan. USAID has provided US $ 81 million for Stage-I of the Kurram Tangi Dam project. The Multipurpose dam project Stage I was started in March 2017, undertaken by 495 Engineers Construction Group Frontier Works Organization.[132]

According to historical background of the project, such dam had been identified by British Raj in 1936, former President General Pervez Musharraf had approved the construction of the Dam but some political reasons became hurdles in the way of project implementation. The main purpose of the project to established the irrigation system for arid lands of Spira Ragha plain, Sheratala plain and Datta Khel. It will provide 18.9 Mega Watts in Stage-I and total 83.4 Mega Watts generation of hydropower for North Waziristan district. It has effectively controlled flesh flood which caused large scale destruction in the past. The multipurpose project brings socio-economic opportunities and prosperity in North Waziristan. It is a mega project in the tribal areas.[133] It has been observed during research study visit to Tehsil Mirali and Thesil Shewa of District North Waziristan, currently the scarcity of water is the main problem throughout the area, millions of acres land have become barren. This dam would bring positive revolution in the life of millions of people in the region. Humayun Saifullah has described that: "Kurram Taangi Dam would generate 84 Megawatts electricity and help irrigate 3, 50,000 acres of barren land in the Southern districts. The dam construction and utilization of water, water share of Khyber Pakhtunkhwa would not be affected".[134]

Stage-I Weir on Kaitu River

Stage-I Kaitu Weir is located at the distance of 28 KM from Tehsil Mirali the Head Quarter of North Waziristan near Spinwam across, Kaitu River**.** This project was

[132] Construction Team Engineers (Frontier Works Organization), *Kurram Tangi Dam Project Brief Notes*, 2019.
[133] MM Pakistan, *Kurram Tangi Dam Project Brief Notes*, December 5, 2019.
[134] *The News International*, April 4, 2019.

sponsored by United State Agency for International Development (USAID) program, original grant for Stage-I, Executive Committee of the National Economic Council (ECNEC) was given final approval on March 2014 for Rs. 12.662 Billion and revised PC-I was for Rs. 21.205 Billion. Work was started in 2016, undertaken by Engineers Construction Group.

Salient feature of Weir on Kaitu River Stage-I

- Type Roller Compacted Concrete (RCC)
- Discharge (Design Flood) 78,000 cusecs
- Height of weir 13 feet.
- Length of main weir 302 feet.
- Length of under sluices 70 feet.
- **Feeder Tunnel**
- Length 6,400 feet.
- Discharge Capacity 1200 cusecs
- Power generate from PH, No-IV 18.5 Mega Watts.
- **Spaira Ragha Canal**
- Cultivable Command Area 4,080 Acres.
- Length of main canal 8.1 Miles.
- Length of Distributaries and Minors 3.52 Miles.
- **Sheratalla canal**
- Cultivatable Command Area (CCA) 12,300 Acres.
- Length of main canal 16.43 Miles including 3 KM tunnel.
- Length of distributaries and minors 34 Miles.
- Power generate from PH, No-V 0.4 Mega Watts.

The 33% water of Kaitu Weir will release in Kurram River after generation of 18.5 Megawatts electricity from power house-IV.

Salient Features of Main Kurram Tangi Dam Project (Stage- II)

Dam Type	Concrete Faced Rock fill dam (CFRD)
Dam Height/Length	322 feet/1035 feet
Dam Crest elevation	2142 feet
Normal storage elevation	2127 feet
Reservoir Area	10,940 Acres
Gross/Live Storage	1.2 Million Acres Feet/0.9 Million Acres Feet
Total Power Generation	83.4 Megawatts
New Thall Canal	68,000 Acres
Existing Civil Canals	2, 74,000 Acres

Up gradation of Kurram Garhi Head Works

The estimated objectives of the project are storage of 1.2 Million Acres Feet water for following purpose.

- Supplementing existing command area of two canals, 278,000 acres.
- Irrigated agriculture development of new area by three canals, 84,380 acres.
- Hydropower generation of 83.4 Megawatts.
- Flood mitigation and and socio-economic uplift.
- Poverty reduction and infrastructure development.

With the completion of Multipurpose Kurram Tagi Dam, the beneficiaries of whole tribes in the region such as the 6,000 acres land of Ahmed Khel, 10,000 acres land of Wazir tribes of Latambar in Karak, 40,000 acres land of Mamadkhel, Janikhel, Bakkakhel and Hindikhel would be irrigated and it would change the fate of the entire tribes. The related areas of the Kurram River also would be irrigated , 50,000 acres barren land of Bannu and 50,000 acres land of Naurang in Lakki Marwat. The 150,000 acres of land from

Hindikhel would be irrigated from Marwatkhel which would produce corps and change a lot of people.[135]

There are many other small dams projects under construction while Tribal Areas like, Dandy Dam in North Waziristan, Moto Shah & Gandao Dam in Mohmmand District, Zao Dam in Khyber District, Ranghagan Dam in Bajaur District and Dargai Dam in South Waziristan the projects was started during the 2008 to 2013; the main objective of its projects was to provide water for irrigation, millions of acres barren land in such areas.

3.7 Corps Contributions in Social Sector Development of Tribal Areas

History of mankind tells us that whenever any foreign forces try to conquer any other nation, they first destroy their education system which automatically subdues the subjects of the conquered area to their new masters. Taliban has repeated the same history. They tried to completely destroy the education system and desired to promote their religious and fundamentalist views. The Militants claimed that the education system of Pakistan is propagating western education which promotes un-Islamic values among the youth of Pakistan. They wanted to stop the promotion of western ideas through imparting the Islamic education to the generation.[136]

The militants have stated campaign against the government schools and colleges in tribal areas especially the female education. Hence to fulfill their objectives, they began to target the schools buildings which were then detonated. According to the report, almost 458 schools and colleges were either destroyed or partially damaged through Improvised Explosive Devises, from 2007 to 2013 in the tribal areas.[137] Engineers Division has completed many need based projects I. e. veterinary hospitals, Mosjids, and market complex, schools and dispensaries in Tribal Areas. These projects not only facilitate tribesmen but also create and improve various job opportunities for local population.[138]

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[135] *The News International*, April 4, 2019.
[136] Shuja Nawaz, "FATA a Most Dangerous Place," *Center for Strategic and international Studies* (January 2009): 11.
[137] *Corps of Engineers Journal* (2014): 188.
[138] Interview with Assal Jan, on December 4, 2019.

Table. 1

UAE-Pakistan Assistance Projects to Improved Education system in North-West Tribal Areas and Swat

Description	**Quantity**
Primary/High Schools	38
Middle Schools	02
High Secondary/Model Schools	03
Degree Colleges for (Boys)	03
Degree Colleges for (Girls)	03
Technical Colleges/Vocational Institutes	02
Cadet Colleges	03
Total	54

Source: Corps of Engineers Journal, 2014.

The development of South Waziristan Areas was the central piece of Quick Impact Projects, twenty three projects have been completed including four hospitals three educational institutes and twenty water supply schemes. About 1.7 billion rupees have been undertaken in this area. The construction of modern educational institutions, health and water supply projects would be "Game Changer" in social development of South Waziristan areas.[139]

The government has repaired/rebuild about 130 in both South and North Waziristan districts and 17 schools in other tribal areas. Three cadet colleges has been built just

[139] *Corps of Engineers Journal*, 2014,72

Chief of Army Staff special grants, about 558 students has completed their education and performed their services in different national institutions. Security forces has taken many steps to improved standard of general education also established vocational training centers in North and South Waziristan and other remote areas of tribal belt.[140]

3.7.1 The Market Complex Project of Miranshah

The project of Market Complex of Miranshah was completed by 45 Army Engineer Division, an endeavor to revive the economic activities of people of tribal areas. Indirectly extends the triple population with national main stream and an alternate opportunity to legal business.[141]

The Market Complex Miranshah contains 42 market modules having more than 1300 shops, internal road network for passage of traffic, separate parking areas for trucks and cars, dedicated electric supply, 4 x lavatory blocks, water supply scheme and last but not the least, a lush green children's park in the middle. The same model market complex is established in Turi Mirali North Waziristan District by 45 Army Engineers Division for enhancing the trade activities in the local section. It also provides the local trade opportunities for traders. The Model markets have been built in 30 places of tribal belt, helps locals to re-establish and enhance their business activities.

[140] Shamim Shahid, "*Armed Forces Contributed in uplift of Waziristan* July 21, 2017, Accessed December 21, 20199, http://www.pakistantoday.com.pk.
[141] *The Sappers Journal* (2014), 73.

Table. 2

Social Sector Development Projects under UAE-Pakistan Assistance Reconstruction/Development works

Category	Malakand	Bajure	South Waziristan	Total
Education	49	01	03	53
Health	02	01	04	07
Water Supply Schemes	24	20	20	64
Total	75	22	27	124

Source: Corps of Engineers Journal, 2014.

3.7.2 Construction of Agriculture Park Wana and Market Complex Makeen

Agriculture Park Wana comprise multiples of components including pine nuts processing plant, 1000 tons capacity, cold store facilities and market complex Makeen. These projects have been completed by army Corps of Engineers collaboration with the government.[142] The projects are part government's long term developmental planning to tribal districts including in national main-stream. The park is one of its kind in the region, it contains a market complex, five warehouses, commercial bank, hotel, pine nuts plant, hawker shade, cold store and other structure. The Makeen Market complex project consist of 42 market modules having more than 1300 shops, internal roads network for passage of traffic, separate parking area for trucks and cars, electric supply, water supply scheme and children park. This mega project will host 50 kinds of businesses in which 703 people will get employments, while 1038 people will be facilitated as labor from the local population.[143] The trade of local agricultural products like, pine nuts, vegetables and

[142]"General Qamar Javid Bajwa Chief of Army Staff, Inaugurated two Mega Projects in South Waziristan Agency". on April 5, 2018, Accessed form http://www.ispr.gov.pk.
[143] Javid Yousaf, "*Agricultue Park Wana, A Boom to Business in the Tribal Districts*", December 7, 2019. Access from http://nayadaur.tv.com.

fruits related business will be improved, which will be beneficial for native economy. The agricultural park is located only few hours away from Angoor Adda in the south along with Ghulam Khan Terminal in north (Pak-Afghan Border). This project will be a hub for business of both neighboring countries.

This project has been considered as economic elevate program for tribal districts of Khyber Pakhtunkhwa. It not will only facilitating native population but also hoped that it will open the links through Central Corridor with Afghanistan and neighboring counties. The project will open avenue for the development chances of Central Corridor North and South Waziristan in particular and not cut down wastage and ensure availability of products to the local population, but will help in socio-economic development through trade and creating direct and indirect new jobs. [144]

[144] Bureau Report, *The Down Newspaper* on January 20, 2018.

Table. 3

The partially damaged Schools by Militancy in North-West Tribal Areas

Location	Boys Schools	Girls' Schools	Total
North Waziristan	23	09	32
South Waziristan	29	06	35
Mohmand	66	22	88
Orakzai	23	11	34
Kurram	45	16	61
Bajure	68	27	95
Frontier Region Peshawar	11	04	15
Frontier Region Kohat	17	15	32
Frontier Region Tank	02	02	04
Frontier Region Lakki Merwat	02	02	04
Total	317	141	458

Source: Sami Ullah, "Why did Taliban Destroyed our Schools"

3.7.3 Construction of Cadet College Wana

Cadet College Wana was conceived by Ashfaq Pervez Kiani, Chief of Army Staff Wana cadet collage is first of its kind in Wana was established in December 2010 with the support of Tribal Areas Secretariat and locals. The financial support was provided by United Arab Emirates under Quick Impact Projects Program phase one for the reconstructing of war on terror affected areas.

The first session of 9th class was started in April 2011 and that of Class 11th on August 1, 2011. About one hundred acres of land was acquired for this institution of which, survey was carried out by Engineers Battalion and Survey Group Engineers. It is considered to be valuable gift from the Army to the tribal areas for quality education and social uplift of

the area.[145] According to the reviewed of its students, Cadet College Wana is the best residential educational institution in South Waziristan.

3.7.4 Cadet College Spinkai

The second Cadet College Spinkai in South Waziristan, which was built as a part of the UAE-Pakistan Assistance Projects, at the total cast of (Dh 23.14 million). The college, offers 450 cadets, it is built on an 11,054 square meters plot and consist of 22 classrooms, four fully equipped laboratories, staff and students accommodation and sport hall.[146] There are provided better facilities to the students learn different social skills including public speaking, photography, gardening and literature. Number of the intelligent students are studying in best schools of other of other provinces of the country. The extensive investment in education will provide many opportunities for young people to obtain jobs or continuing further studies elsewhere. It providing standard education facilities to the able and hardworking students who support their families and the served the nation.

[145] *Corps of Engineers Journal* (2014): 71.
[146] "UAE-Funded Cadet College Open in Pakistan's South Waziristan", *Gulf News* Accessed December 21, 2019, from http://gulfnews.com.

Table. 4

Quick Impact Projects (QIP) Phase 1 Projects

S/ No	Construction Field	Amount (M)	Details of Projects
1	Roads & Bridges	3200.38	Sheikh Khalifa Bin Zayed Al Nahyan Wana to Angoor Adda Road (50 km)
2	Education	442.58	Establishment of Cadet College Wana, Govt Degree College Ladha and Model School Wana.
3	Health	713.72	Construction of District Hospital at Toi Khula and Angoor Adda, Construction of Model health facilities at Ladha and Tiarza and a model hospital at Azam Warsak.
4	Water Supply Schemes	184.00	Tube well based water supply scheme at Wana Bazar, Lover camp Wana, Doag new Abadi, Kot Kai, Sararogha Bazar, New Sarwekai, Ghundkai Sarina Jala, Michi Khel and Sirki Khel. Drip water supply system at Angoor Adda and Khojal Khel Shakai; and gravity based water supply scheme Splay Poram, Kachkai and Morgaband.

Source: Corps of Engineers Journal 2014.

3.8 Corps of Engineers Efforts towards Providing Facilities to Human Resources Development of Tribal Areas

In the conflict areas of Malakad division and North-West Tribal district, most of the youth and people have lost their sources of earning live hoods. To rehabilitate the youth and poor population of the area, short term training activities are necessary to equip the youth with saleable skills enabling them to earn their live hoods through decent means and make them useful part of the society instead of involving in unlawful activities which cause huge loss to the economic development of country and human lives.[147]

There are various special technical skill courses conducted in Construction Technology Training Institute Islamabad, Trade Training Center Risalpur, IDPs camps areas and also provided same opportunity in running projects in tribal areas. These courses were run with the collaboration of KOICA and JICA on August 2010. According to press release of Inter Service Public Relations, data states that 1500 youth from South and North Waziristan areas has joined Armed forces and 7500 Frontier Corps.[148]

3.9 Conclusion

The north-west tribal areas are one of least developed parts of Pakistan, Its majority population living below the poverty line. Such poor condition of the people, became a major factor of illegal activities and insurgency. North-west tribal areas has badly affect by post 9/11 militancy conflicts and paid a heavy price in the shape of sacrificed their families, heavy big loss of socio-economic framework and deep impacts on a tribesman life. The monsoon floods, 2010 were badly effected north-west tribal areas and Swat, such areas became disaster zones. Post war-on-terror, government has launched various rehabilitation/reconstruction projects to repair and maintain the infrastructure of war-on-terror effected areas. These reconstruction programs were completed under the security umbrella of armed forces to maintain peace and stability. Developmental strategy of the

[147] Construction Technology Training Institute Islamabad, *Brief Notes*, (2010), 8.
[148]Shamim Shaid, "*Armed Forces Contributed in uplift of Waziristan*," Accessed December 23, 2019 http://www.pakistantoday.con.pk .

government not only helped to promote peace and confidence building of tribesmen on the security forces government.

CHAPTER: 4

Pakistan Army Corps of Engineers Contributions in the Development of Swat (Post 9/11 Conflicts)

4.1 The Swat Valley: An Appraisal

Swat known as Switzerland of Asia because of its natural beauty and climates, located at too significant geographic position, South Asia, Central Asia and China and several strategically major region meet here. Two mountain systems, Karakoram and Hindu Kush crosses through the Swat Valley. It also having a great and ancient historical prospective and culture from Ghandhara civilization. Swat Valley had remained independent or semi-independent state or territory its own history. From the time of partition in 1947, Swat as a princely state acceded affiliation with Pakistan, but remained its internal sovereignty till 1949. Minangul Abdul Haq Jahanzeb was ruled the Swat state from 1949 to 1969, In 1969 General Yahya Khan then Martial Law Administrator of Pakistan, Swat State merged into North West Frontier Province as district of Malakand Division.[149]

The valley consist on 5737 sq. kilometers area with 2800 feet average elevation from sea level. Southern boundary of Swat is situated 91 km from Peshawar the provincial headquarter and 211 km from Islamabad. Swat valley administratively district of Malakand Division of Khyber Pakhunkhwa, district Swat consist of seven tehsil units, Matta, Mingora, Swat, Babuzai, Kabal, Khwaza Khel, Charbagh, Bahrain and KalamTehsils, a part of Swat ranizai (a sub division of Malakand protected area) and small portion of Adanzai (district lower Dir) The valley gradient is from northeast and northwest to south like a basin surrounded from all side by mountains. Gilgit and Chitral share the north boundary of Valley, Malakand the divisional headquarter lies in south, Upper and Lower Dir touch in west, district Buner lies in South East and District Shangla located in the East of the Swat Valley. The maximum length of the Valley from north to south 150 kilometer and maximum width is 50 Km while the minimum width is 13 Km… The physiographic region of the Swat valley entirely consists of the great Hindu Kush

[149]Tabassum Majeed, *Insurgency in Swat*, 31.

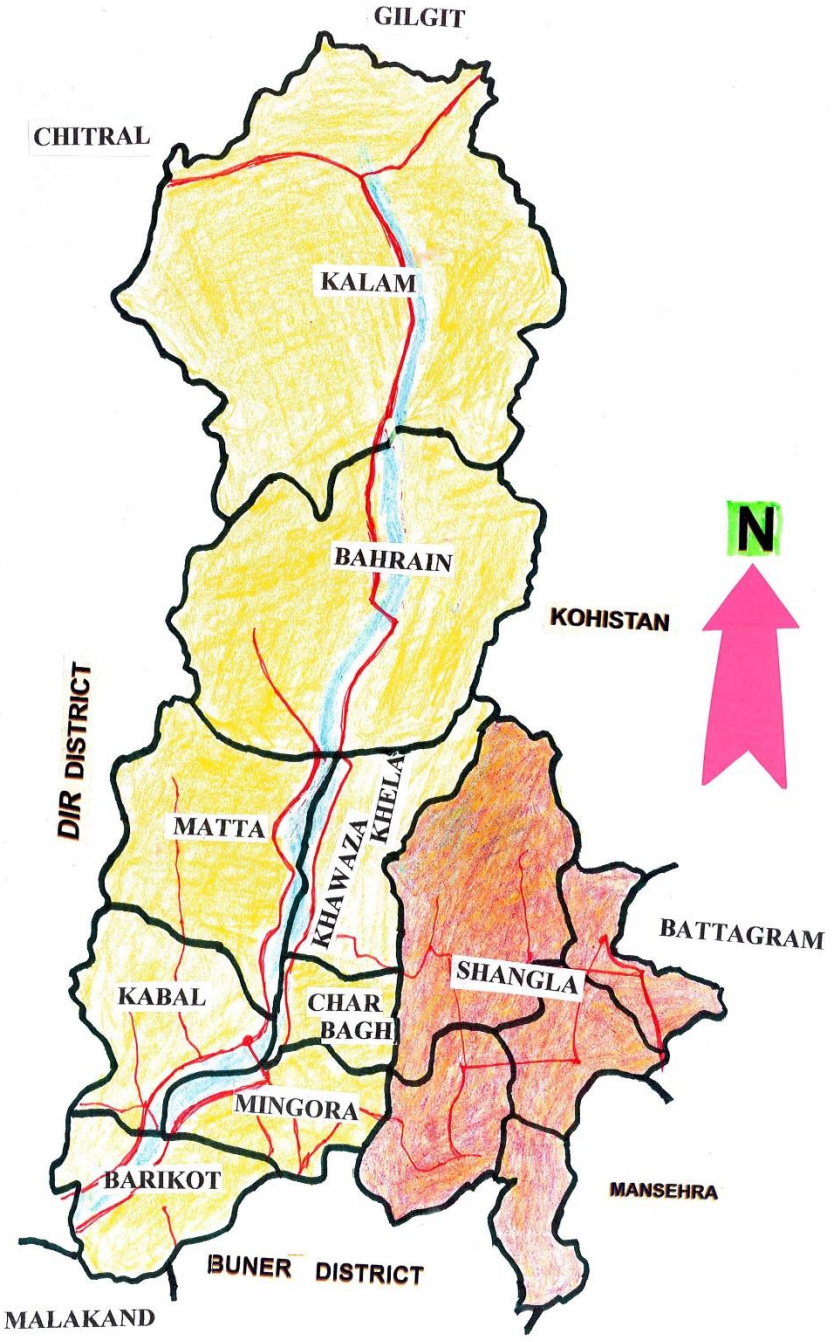
mountains system running north to Southeastwards. Swat Valley have various attractive season spells, the summer season is very moderate but December and January are the coolest month of the Valley temperature go down to freezing point.[150]

The population of any region is directly related to the economy of that region… population of the Swat valley is about 2.2 million, Mingora is the primate city with the population of 0.174 million, it is the 3rd largest city in the province after Peshawar and Mardan. Batkhela is another largest urban center of the valley with 43,179 populations.[151]The density of population of Swat valley is 331 persons /sq. km. The majority of population 86% living in rural areas. The population density is lowest in district Swat 236 person/sq. km because of larger un-habitable and higher density of Swat ranizai and it is due to wide fertile and irrigated land… the population is pre-dominantly Muslim 99.6 other is Christians, Hindus and Sikhs etc. Pashto and Kohistani are the largest spoken languages of Swat valley.[152]

[150]Muhammad Alam, *Swat valley*, 17.
[151] *The Census Report* of 1998,
[152]Muhammad Alam, *Swat valley*, 129.

Figure. 4

Map of Swat Valley



Source: (Modified) Tabassun Majeed, Insurgency in Swat, 119.

4.1.1 Roots Causes of Swat Valley Conflicts

The peaceful Swat Valley sieged by militants soon after 9/11 incident but there are many radical causes helped the militancy movement. A new phase emerged in the politics During Zulfiqar Ali Bhutto in 1970, Swati leadership organized against the Peoples Party manifesto "Islamic Socialism" it was serious threat for landlords and feudalists everyplace of the country. Because of economic and land reforms territorial landlords of Swat valley were loosed their power, landowners made an alliance with imams and mullahs "religious leaders and imam also leads in prayers" tissue 'fatwa' against the socialist approach of the government. These fatwa started clearly that Islamic sharia system allows jihad against un-Islamic policies of the existing government. Mullahs and religious leadership succeed to convince the people the abolition of private property is against Sharia. Majority of people supported Nizam-i-Mustafa movement against the sitting government and created Jihadi mindset in the Valley.[153]

During Soviet-Afghan war from 1979 to 1989, General Zia-Ul-Haq also promoted the Islamic Jihadi mindset against Soviet Forces. United State, Europe and Saudi Arabia has provided defense and financial to Pakistan for training of Afghan people combined two religious concepts, i.e., mujahedeen (religious freedom fighters). Saudi Arab has provide funding to promote the traditional Salafi/Wahabi version of Islam for communicate the spirit of jihad, while the American bloc intelligence Agencies are fully involved to pursed their targets.[154]

After the merged into North West Frontier Province in 1969, the demand for implement of Islamic laws increased in the Valley. Tahreek-i-Nifazi-i-Shariat-i-Muhammadi (TNSM) was founded in June 1989 under the leadership of Sufi Muhammad he was a member of Jamat-e-Islami in sixties and delivered the hardline statements of Islam.

The slogan of (TNSM), implement of Sharia (Islamic law) in the region as well as whole country. During Soviet-Afghan war (TSSM) fully enjoyed and strengthen their foothold

[153] Muhammad Alam, *Swat valley*, 130.
[154] Saira Bano Orakzai,"*Conflict in the Swat Valley of Pakistan*," 39.

and become popular Islamic movement. In 1990 Benazir Bhutto has elected as a Prime Minister of Pakistan TNSM leaderships refused to accept the Woman as leader they declared un-Islamic and opposite the teachings of Islamic Sharia. Once again the name of Islam and demand of Sharia system in Benazir government period.[155] The Supreme Court of Pakistan declared the Provisional Administrative Tribal Area (PATA) laws unconstitutional. Sufi Muhammad has strikes against Supreme Court conclusion and sitting government to implement the Sharia system in the region. The Benazir government has taken hard action against (TNSM) strikes and normalize the situation. At least Benazir Bhutto government has accepted their demands and passed the Nifaz-e-Nizam-e-Sahariat series of Regulation in her both governments. These laws no implemented and on groundwork had been prepared for their enforcement.[156] The historical patterns show that the roots causes of Swat conflict are meeting ongoing religious and administrative factors in the country.

4.1.2 Post 9/11, Anti-State Movement and Conflicts of Swat

After withdrawn of Soviet forces from Afghanistan, Taliban controlled the major part of Afghanistan and enunciated their government Pakistan and Saudi Arabia acknowledged new emerged Taliban group and opened her embassies in Afghanistan, leadership of Jihadi groups, both counties linked with each other for a long time. Every sitting governments of Pakistan, developed relationship with Taliban leadership, Pakistan's Pashtun areas responded by Taliban established Islamic government system. Post 9/11 incident, Pakistan withdrawn their diplomatic and moral support from Taliban by American presser. The supporters and fellows of Afghan Taliban were unhappy with this dissension and they vowed to start aggressive action against American forces and their allies including Pakistan.[157]

Sufi Muhammad having good relationship with Afghan Mujahedeen leadership from Soviet-Afghan war and post 9/11. He was strongly opposed the General Musharraf affiliation with USA War-on-Terror. Leadership of (TNSM) has launched proper campaign against USA allied forces including Pakistan. He warmed up innocent people

[155]Tabassum Majeed, *Insurgency in Swat*, 38.
[156] Saira Bano Orakzai, *"Conflict in the Swat valley of Pakistan*," 40.
[157] Sultan-i-Romi, "*Crisis and Reconciliation in Swat*." 60.

through FM radio and direct meetings and rise the slogan, to enforcement of Islamic Sharia. [158]

The extremist philosophy TNSM has based on Wahabism, revolving around Jihad, extremism anti-modernism, anti-state and anti-women education. Khadim Hussain observed that: "the strategy followed by Sufi Muhammad and was based on Salafi Jihadist ideology, to change the socio-cultural and socio-political power structures in the Valley of Swat. The strategies that formed Fazlullah's discourse included ideological influence, social contagion, social control and extension of the social control."[159] After the 9/11 incident, Pakistan's highest authorities at the provincial and federal level repeatedly alleged involvement of foreign agencies such as CIA, RAW and Afghan Intelligence Agencies were activated with Tahreek-e-Taliban Pakistan (TTP), Tahreek-e-Taliban Swat and other small jihadi organizations inside Pakistan.[160]

In October 2007, Ali Muhammad Jan Orakzai, the then Governor of Khyber Pakhtunkhwa, described that "he had evidence of the involvement of foreign hand in the insurgency of Swat and other tribal areas. The local people of Swat also believed that the agent of RAW intelligence agency of India, were directly involved and working within the ranks of the Taliban. Hagi Muslim Khan, the spokesman of Tehreek-e-Taliban, Swat led by Fazlullah, claimed the involvement of internal as well as external agencies in the attack on policemen and girls schools in Swat in May 2008."[161] There many evidence solid profess such as Indian ordinance, Improvise Explosive Devices, pamphlets, currency, maps and training material was captured during the search operations in Swat and Tribal Areas.

Miscreants had been preaching their version of Islam through FM radio, later they started burning girls' schools, CD shops and killing innocent locals too. There had been 60-70 recorded terrorist attacks in Swat region since July 2007, including nine suicide bombings and numerous public beheadings. Most of these attacks targeted security

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[158] Khadim Hussain,"*Can Paradise be Regained*," https://newslinemagzine.com, December 2007, accessed on dated, 22-12-2019
[159] Tabassum Majeed, "*insurgency in Swat*, "69.
[160] Sultan-I Rome," Crisis and Reconciliation in Swat" *A Journal of Pakistan Studies* Vol. 3, no. 1(2011): 59.
[161] Tabassum Majeed,"*Insurgency in Swat*," 59.

forces, killing over one hundred and injuring over hundred and fifty security bureaucrats. Continued violence forced 60% of the inhabitants of Swat Valley to flee from their homes.

With the passage of time Tahrek-e-Taliban Swat become more strengthened in 2000s, bond the social activities and destroyed the pre- historic rocks carvings in his controlled parts of Swat Valley. Militant created uncertainty situation for natives and become serious challenge for government till 2017. General Pervez Musharraf government banned (TNSM), his brother was killed in military operation and Lal Masjid phenomenon events increased hostile response with government. Leadership of TNSM linked with Tehrik-i-Taliban Pakistan and he gave new momentum to his Organization with a new name of Tehrik-i-Taliban Swat. Fazlullah was an announcement of full-fledged action against security forces. In an interview, Fazlullah described that:

"I just told my followers to be prepared for Jihad. Whatever has started in Swat is not related to my announcement, but it is related to the government operation in Lal Masjid and Jamia Hafsa. It is the responsibility of every Pakistani to rise up in arms against those who are bombing their own people."[162]

4.1.3. Military Operation Al-Mezan (2007-08)

Malakand Division, already affected due to ineffective and exploitative judicial system, proved an ideal harboring place for absconders and miscreants. Maulana Fazal-ullah, son-in-law of famous religious leader, Sufi Muhammad garnered support of local population, employing FM radio and multifaceted persuasive and coercive tactics. He galvanized terrorist gangs and miscreants with tacit objective of taking control of the entire area and expanding his influence.

Having done so, the miscreants entrenched themselves in mountainous terrain with active support of terrorist outfits operating in tribal areas and Afghanistan. From there they forced functionaries of all government departments including police to flee from area. By the end of 2007, militant reigned supreme in Swat and started flexing their muscles

[162] Qandeel Saddique, "Tehrik-e-Taliban Pakistan: An Attempt to Deconstruct the Umbrella Organization and the Reasons for its Growth in Pakistan's North West", *Danish Institute for International Studies*, Report (Dec 2012), 7.

towards neighbor districts i.e. Shangla, Buner etc. posing direct threat to strategic link with China.[163]

Militants has expanded their influence gradually across Matta, Khwazakhla and into neighboring area of Shangla in West and up to Madiyan in North. They severely undermined writ of government by attacking police station and Frontier Corps posts, molesting public functionaries, snatching state vehicles and equipment to sequester state authority. In order to extend their influence beyond Swat Valley, militants reached Shangla top on 2007 and around 50 terrorists occupied Shangla police post, rest house and also occupied positions on the adjoining heights points. After having taken over control of Shangla, they started posing threat to strategically important Karakorum Highway, a communication artery linking China through Northern areas. Taliban had already controlled of key towns Mingora and Daggar. The movement of Tehreek-e-Taliban Swat has enhanced their control and a time came when Islamabad just 60 miles away from the Taliban of Swat. It was serious situation for Pakistan as well as the international community.[164]

When reconciliatory administrative efforts failed and writ of the state was grossly challenged, forcing central government to take stern counteractive measures. In view of worsen situation in Swat Valley and its surroundings, Army was tasked to restitute writ of state and cleared areas from militants. Consequently, the Army troops were employed in Swat Valley in July 2007.[165]

Militants were equipped with small arms, mostly Kalashnikovs and grenades. Weapons snatched from Law Enforcement Agencies were also used. Transport used by miscreants, mainly comprised of vehicles snatched from different Agencies and other government departments. Terrorist also had light communication equipment.[166] An agreement of cease-fire was signed in May, 2008 between Khyber Pakhyunkhwa Tehrik-i-Taliban Swat groups.[167] The essence of agreement was that the government would. Both,

[163]Tabassum Majeed, *Insurgency in Swat*, 90.
[164]Majeed, *Insurgency in Swat,* 91.
[165] *Shining in History* (2007-2008), 122.
[166] Ibid, 123.
[167] Daud Khattak, "Reviewing Pakistan's Peace Deals with the Taliban", *Combating Terrorism Center at West Point* (September 2012 Vol. 5 Issue 9), Accessed on December 21, 2019, from http://ctc.usma.edu.

government and Taliban of Swat has violated the peace agreement with in a month. Militants has been restated their anti-state activities from June 2008 with full-energy. Education was banned, school and college were demolished and hijacked the almost Swat Valley. About 2.5 million people migrated to safe places.

The provincial government of KPK has signed agreement with Sufi Muhammad on February, 2009…both sides agreed on such demands, implementation of Islamic law in whole Malakand Division including Swat and government withdrew armed forces from the Valley. In return, the militants will stop their activities[168]According to my observations, during negotiation and peace accords with government duration the militants became more strengthened.

4.1.4 Military Operation Rah-e-Rast (2009)

The ceasefire agreement February, 2009 was could not run for long time, Tehrik-i-Taliban and their allied restarted terrorist activities in Malakand division. International media has warned that TTP may be captured Pakistan nuclear weapons. Government decided to take effective and powerful action against Tehrik-i-Taliban Swat to reestablish the government writ in Swat Valley and across Malakand division. Another major military operation named 'Operation Rah-e-Rast' was launched on May 11, 2009. Security forces clean the Valley from militants through capturing second-tier leadership of the Tehrik-e-Taliban Pakistan (TTP) and Tehrik-e-Talban Swat and cut down their supply line.[169] The Operation Rah-e-Rast was most successful of all counter-terrorism operations launched by the security forces since 9/11.[170]

Swat had become focal point of militants for more than one year. During this period, the extremists stained this peaceful and scenic tourist heaven in every possible way. Apart from terrorizing the civil population, they disturbed the communication network bridges, roads and damaged the education system in the area. The education system was halted as militants considered the modern education system and education for girls is against the teachings of Islam. As per their beliefs they destroyed the regional education system

[168] Tabassum Majeed, *Insurgency in Swat,* 87.
[169] Amir Rana, *Dynamics of Taliban Insurgency in FATA*, 3.
[170] Ibid, 4.

about 470 schools were raised to ground.[171] The important bridges and major roads were damaged by improvised Explosive Devices, disturbed the communication structure they not only created problems for local population and security forces. The major bridges and roads I.e. Malakand-Mingora, Besham-Khawazakhela roads were exploded by Improvise Explosive Devices. A span of Shamozai Bridge, Ayub Bridge and Hazara Bridge was blown over which affected the traffic movement.[172]

Militants and counter military operations demolished the administrative and social and framework of Swat Valley. Aryana Institute for Regional Research and Advocacy (AIRRA) allegedly reported that "the loss to agricultural output in Swat during 2008-2009 was around four billion rupees. The process of peace building was started soon after the return of (IDPs) in late August 2009."[173] After the clearance of Swat from militants, government of Pakistan has taken immediate steps to restore normal life in the Valley, through adopting their strategy of 'win the hearts and minds of people'. Two main challenges have been undertaken by armed forces, first IDPs return to their homes and second repair the damaged infrastructure with urgent bases.

The Quick Impact Projects (QIPs) were launched with the help of International community. These projects were started under the security umbrella of armed forces to repair and rebuild the communication, education, health and agricultural sector. Army Engineers Brigade Group was placed under command E-in-C's Branch, on June 8, 2009 and moved with under command units to the operational area. From the valiant support of the people of Swat Valley and holy sacrifices of Pakistan Army Soldiers, the extremism was pushed out from the region in 2010.[174] Pakistan Army launched various short and medium terms planned projects in the education, health and communication sector. Army Engineers have undertaken the responsibility of reconstruction of the schools and communication system of Swat Valley. In September 2010, the 45 Army Engineers

[171] Muhammad Israr, *Post 2009; Revival of Female Primary Education in District Swat of Khyber Pakhtunkhwa*, at https://www.researcgate.net/publication on December 18, 2019.
[172] Editoial Borard, *Corps of Engineers Journal* (2014), 186.
[173] Tabassum Majeed, *Insurgency in Swat*, 94.
[174] Editorial Board, *Winning Hearts and Minds: Valley of Swat* (The Sappers Journal, 2014), 186.

Division has started reconstruction/rehabilitation, 124 projects in social sector of Malakand division and North-West Tribal areas with the worth of US$ 50 million.[175]

Table. 5

Quick Impact Projects in Swat Valley

Project Description	**Fund Allotted (M)**	**Total Projects**
Health	15.10	58
Education	62.33	542
Village Development	55.01	211
Water and Sanitation	83-52	318
Communication Infrastructure	60.85	89
Miscellaneous	15	9
Total	291.61	1227

Shining History 2007-2008.

[175] Mumammad Waseem Baber, *Building Peace Social sector Development in FATA and Malakan division*. Corps Engineers, Journal, (2014), 67.

Table. 6

Detail of Quick Impact Projects in Swat Valley

Sector	**Types of Schemes**	**Total Schemes**	**Total Projects**
Village Development	Pavement of Streets	80	
	Hydro Power Projects	13	
	Flood Protection Bunds	03	112
	Maintenance of Mosques	10	
	Uplift of Towns	06	
Water Supply and Sanitation	Water Supply Schemes	84	
	Sewerage System schemes	07	
	Group Latrine Schemes	46	174
	Water Storage Tanks	37	
Communication Infrastructure	Roads and Tracks	47	
	Construction of Bridges	31	
	Repair of Bridges	08	87
	Installation/Construction of Chairlift	01	
Health	Repair/Maintenance of Health Facilities	10	
	Construction of Emergency Centre		12
	Provision of Ambulance	01	
		01	

Shining of History 2007-2008

4.2 Corps of Engineers contributions to reconstruction of communication structure of Swat

Swat has become the fortress of militants' activities for more than a year. During that time, the extremists applied the strategy to control the important bridges and roads. They also exploded the major bridges and broken the important connectivity roads. The Damaged bridges and roads was not only created a problem for local residents but impeded the movements of security forces. The major roads like Malakand-Mingora and Besham-Khawazakhela roads were damaged with Improvised Explosive Devices blast. A span of Shamozai Bridge was blown over River Swat which effected the movement from Malakand to Cabal. Militants has broken a span of Ayub Bridge which cut Mingora city into two halves. Hazara Bridge, Kabal Bridge and.[176]

4.2.1 Construction of Sheikh Khalifa Bin Zayed Ali-Nahyan Bridge (Old Gammon Bridge) Swat

The roads network of Swat Valley badly damaged with monsoon floods in 2010 and militants activities. Washed away major bridges including Gammon Bridge on Swat River and important road links were wiped out. Damage to communication and infrastructure made the living conditions extremely difficult for the local residents. United Arab Emirates, realizing the urgency came forward to extend the financial support for early construction of new bridge.[177] The new Bridge was completed by Frontier Works Organizations in a record time. Ashfaq Parvez Kayani (COAS) installed opening ceremony of Skeikh Khalifa BinZayed Ali-Nahyan Bridge in May, 2012 on Swat River. Sheikh Khalifa Bin Zayad Al Nahyan Bridge, restored connectivity between towns of Barikot, Nawagai, Landakai and Parrai. The Government of UAE has paid rich tributes for the generously donated funds to rehabilitate the infrastructure destroyed by floods in the Swat Valley. The 330 meters long steel deck bridge provided great facility for the commuters and more than 70,000 people of Swat Valley benefit from it. A five Kilometers bypass was constructed Army Engineers, it provide an easy and direct access to Kanju and Kabal population.

[176] *The Sappers Journal* (2016): 186.
[177] *Corps of Engineers Journal* (2011-12): 172.

Figure. 5

HH Sheikh Khalifa Bin Zayed Al Nahyan Bridge at Swat River

Source: Corps of Engineers Journal 2009-10

Table. 7

Reconstructions of Bridges and Roads in Swat Valley

S/No	Details	Date of Commencement	Cost of Project (M)
1	Ayub Bridge	04-11 2009	11.3
2	Hazara Bridge		4.08
3	Turwarsak Bridge	14-09-2009	0.772
4	Shamozai Bridge	06-08-2009	1.0
5	Gaman Bridge	06-08-2009	1.73
6	Takhtaband Bypass	08-12-2009	27.5
7	Mingora Bypass	20-02-2010	200

Source: Corps of Engineers Journal, 2014

4.2.2 Clearance of Debris

In the cities of Mingora and Saidu Sharif militants had created road blocks with rocks, electric pylons and tree trunks to hinder the security forces and civilian people movements in the area. In addition, debris and rubble of the demolished buildings was littered all over. All these impediments were removed and roads and streets were made passable.

Table. 8

Detail of different kinds of works

Details	**Date of Commencement**	**Cost of Project (M)**
Clearance of Debris Sultanwa	10-11-2009	10.7
Ayub Bridge Diversion	31-10-2009	5.5
Takhtaband	26-08-2009	2.5
Retaining Wall at Fizaghut	----------	1.4
Road Crossing at Shamoza	----------	3.23

Source: The Sappers Journal, 2016

4.3 Restoration of Education Infrastructure

The education system was halted as militants considered modern education system against the teachings of Islam. As per their ideology, they considered education of girls to be against the spirit of Islam. This belief gave them a false pretext to unleash their menace on the education institutions of their controlled areas. Their major targets were the institutions of female section. Girl's schools and colleges were demolished and their female staff was terrorized to leave their jobs. Most of the roofs, doors, electric and furniture were damage by the IEDs, bomb blast and fire. More than 470 schools were burnt to ground. The restoration of education infrastructure was being carried in two types, reconstruction of partially damaged schools and reconstruction of completely damaged schools.[178]In Swat, 221 schools were completely destroyed, 280 partially damaged by the militants during conflicts. Militancy keeps 600,000 Khyber Pakhtunkhwa children out of schools.[179]

Reconstruction of destroyed schools and bringing back children to these institutions was a mammoth task. Considering the importance, maximum funds of Rupees 2.3 Billion, making 54% of total share were allocated to the education sector for constructing state of art schools and colleges for girls and boys having latest and modern equipment in laboratories and libraries, which will open new vistas of opportunities for the future generation of this region. A number of 53 educational institutions of district Swat, Bunner, Lower Dir and Bajure, reestablish in record time. [180]

[178] *The Sappers Journal* (2016): 187.
[179] Bureau Report, Dawn, *"Militancy Keeps 600,000 KP Children out of Schools*." September 11, 2012.
[180] Muhammad Waseen Baber. Building Peace Social sector Development in FATA and Malakand Division, *Corps of Engineers Journa*l (2014): 68.

4.3.1 Construction of Jahanzeb Postgraduate College and Paramedical Institute in Saidu Sharif

The need based projects, Postgraduate College and Paramedical Institute was constructed by the Army's Engineers under UAE-Pakistan Assistance Program (UPAP). The Government Jahanzeb Postgraduate College having capacity of 600 students. Chief of Army Staff Gen Raheel Sharif was appreciated its quality work he said "the Army would continue to play its role in rebuilding and contributing to long term efforts for peace, stability and social development". He thanked the government and people of UAE for their support to socio-economic projects of the area.[181]

According to an official press release "the 52 educational projects and seven health schemes have been completed in North-West Tribal Areas and Swat over the past few years."[182]The Paramedical Institute Saidu Sharif is one of the quality educational project completed by Army Engineers in the same time. The capability of Institute is 300 students as well 132 students hostel facility.

- Projects were conceived to create visible impact on wellbeing of the community.
- Need based projects were indentified in consulation with civil administration, Nazim of union councils and notables of affected areas/ villages.
- Locals were fully involved in implementation/execution.

[181] The Corps of Engineers Journal, 2016, 187.
[182] Baber," Building Peace Social Sector Development in FATA and Malakand Division," 69.

Table. 9

Rehabilitation of Partially Damaged schools

Details	Date of commencement	Cost of Project (M)
Government Girls Primary School Alamganj	09-10-2009	2.5
Government Girls Primary School Sherpalam	09-10-2009	1.80
Government Girls Middle School Sakhra	09-10-2009	3.93
Government Girls Middle School Ghari	09-10-2009	0.72
Government Girls Middle School Angro Dheri	06-10-2009	1.56
Government Girls Middle School Kad	08-10-2009	2.22
Government Girls High School Zamidara	08-10-2009	1.78
Government Girls High School Gawlerai	09-10-2009	5.51
Shammozai School Complex	08-102009	2.0
Government Primary School Gari	08-10-2009	0.50

Source: Corps of Engineers Journal, 2014.

Table. 10

Construction of Completely Damaged Schools

Details	Date of Commencement	Cost of Project (M)
Govt Girls Primary School Maniar	01-12-2009	3.007
Govt Girls Middle School Qamber	,,	1.850
Govt Girls High School Tahirabad Mingora	,,	3.268
Govt Girls High School Fazalabad Kanju	,,	2.719
Govt Girls High School Zarkhela	,,	2.792
Govt Girls High Secondary School Matta	,,	3.179
Govt Girls High Secondary School Manglour	,,	4.179

Source: The Sappers Journal, 2016.

4.3.2 Women Vocational Training Institute Saidu Sharif Swat

The Vocation Training Center in Mingora is unique institution of its kind in whole Malakand Division imparting quality technical and professional training through latest machines and facility members. The training center helped the talented women to stand on their feet to serve the community with pride.[183] The woman vocational training institute projects in the Valley is one of the biggest steps to woman empowerment of Swat. The same training institutions will produce modern skills for local home industries. It is also helpful for increasing the employment opportunities and bringing prosperity in the Swat.

4.3.3 Construction of Cadet College Swat

The foundation of Cadet College Swat marked the great sacrifices rendered by its people in war against terrorism post 9/11 era. It was great ambition of General Ashfaq Pervez Kiyani Chief of Army Staff to develop a center of excellence in Swat which could prove quality education for the youth of Swat and its surrounding areas of Khyber Pakhtunkhwa.[184] Cadet College Swat has been providing best educational environment with high qualified teaching staff and modern technology from 2011. Army Engineers are still working in Cadet College for further improvement such as construction of new buildings, tracks and tube wells etc. The Sappers committed to performing various developments projects which would help the people of Swat to maintain long term peace and prosperity through standard education.

[183] Waseem Baber, "*Building Peace social sector Development*," 70.

[184] Muhammad Waseem Baber," Building Peace Social Sector Development in FATA and Malakand Division," *Corps of Engineers Journal* (2014): 70.

CHAPTER: 5

Findings and Analysis of the Research

Introduction

In this chapter has briefed the analysis and findings of the methodology implied to conduct this research study. This chapter consist of sub-sections. Section 5.1 deals the finding and analysis of the quantitative survey approach of the study and section 5.2 briefed the analysis of qualitative interview that conducted from the respondents of research study area.

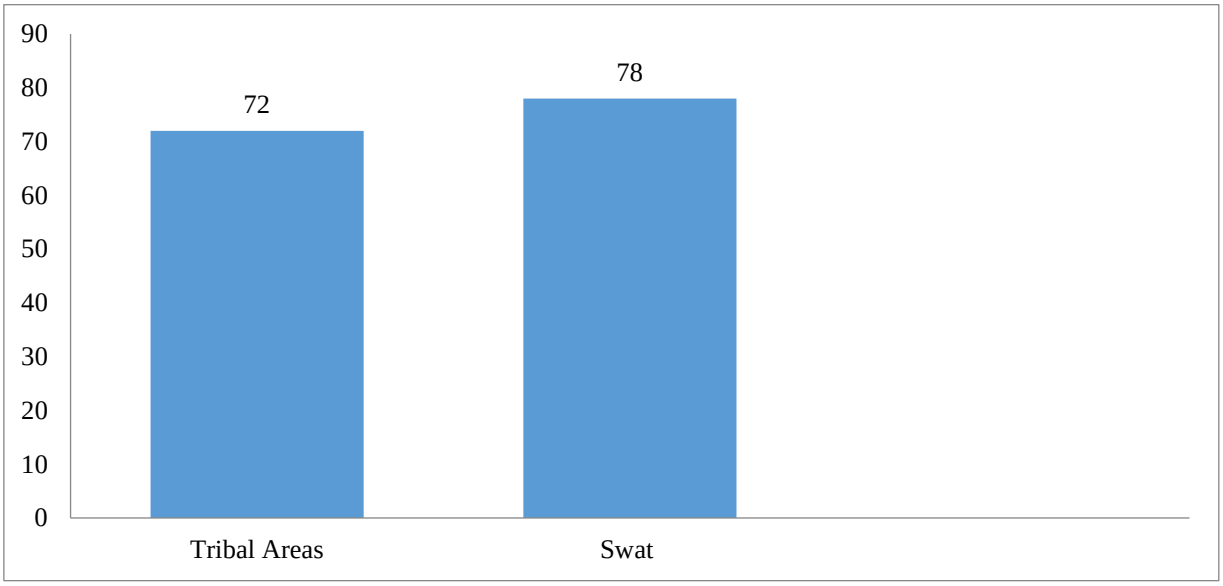
To find answers of research questions of the study, the researcher planned a quantitative survey tool in the shape of questionnaire. The research questions of this study have been operationalized by researcher into several statements in the questionnaire. The researcher has adopted the Convenient Sampling method from study area respondents. One hundred and fifty (150) questionnaire papers were distributed and the date was collected by using the Convenient Sampling technique. Data from 150 respondents was entered into SPSS for analysis. In this chapter the results of survey has been interpreted.

5.1 Quantitative Survey Results

Table 5.1: Breakup of respondents in term of study areas.

	Frequency	Percent	Valid Percent	Cumulative Percent
Tribal Districts	72	48.0	48.0	48.0
Swat	78	52.0	52.0	100.0
Total	150	100.0	100.0	

Figure 5.1

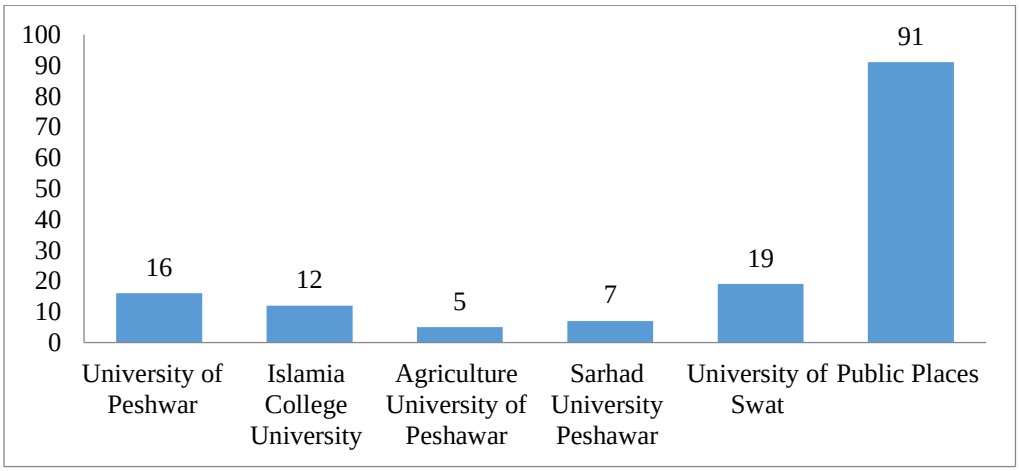


Table/Figure 5.1 suggest that out of 150 respondents who were selected through Convenient Sampling method 48 percent (124) were from Tribal Districts while 52 percent (78) were from Swat.

5.2 Respondents of the survey from fine KPK Universities Public places of tribal districts and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
University of Peshawar	16	10.66	10.66	10.66
Islamia College University	12	8	8	18.66
Agriculture University of Peshawar	05	3.33	3.33	22
Sarhad University Peshawar	07	4.66	4.66	26.66
University of Swat	19	12.66	12.66	39.32
Public Places	91	60.66	60.66	60.66
Total	150	100.0	100.0	

Figure 5.2

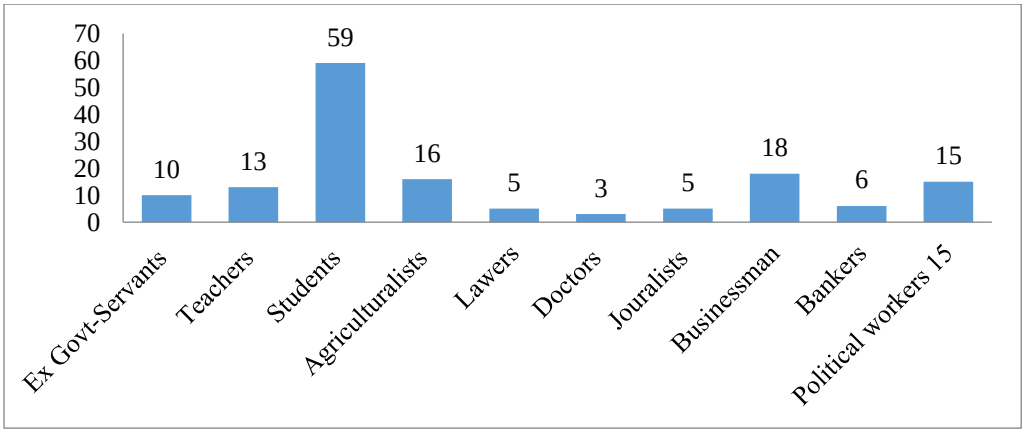


Table/Figure 5.2 shows that out of 150 respondents are the 59 are students from five KPK universities 39.33 percent and while the majority of respondents 60.66 percent (91) members from both tribal areas and Swat.

Table 5.3: Break up of respondents in term of professions from tribal areas and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
Ex Govt-Servants	10	6.66	6.66	6.66
Teachers	13	8.66	8.66	15.33
Students	59	39.33	39.99	54.67
Agriculturalists	16	10.66	10.66	65.33
Lawyers	05	3.33	3.33	68.67
Doctors	03	2	2.0	70.67
Journalists	05	3.33	3.33	74.0
Businessman	18	12	12.0	86.0
Bankers	06	04	4.0	90.0
Political Workers	15	10.0	10.0	100
Total	150	100	100	

Figure 5.3

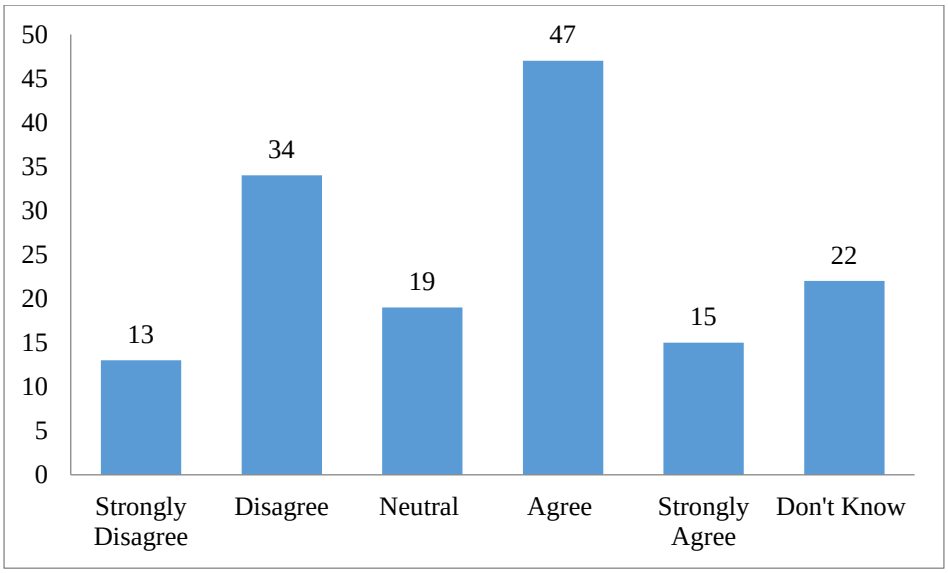


Table/Figure 5.3 show that the 150 respondents of the survey from all walk of life across the whole study areas the majority 39.99 percent were students, 59 out of 150. 12% 18 respondents were businessman, 10.66% (16) were related with agriculture, 10% (15)were political workers 8.66 (13) were teachers, 6.66% (10) were ex-government servants, 4% (6) were bankers, 4% (5) were journalists, 3.33% (5) were lawyers 2% (3) were doctors.

Table 5.4 Mega developmental projects are providing socio-economic opportunities for natives

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	13	8.67	8.67	8.67
Disagree	34	22.67	22.67	31.33
Neutral	19	12.67	12.67	44.00
Agree	47	31.33	31.33	75.33
Strongly Agree	15	10.0	10.0	85.33
Don't Know	22	14.67	14.67	100.0
Total	150	100.0	100.0	

Figure 5.4



Table/Figure 5.4 is about the mega development projects are providing socio-economic opportunities for natives. The result presented in the table indicates that out of 150 respondents 15 (10%) were strongly agreed that the mega developmental projects are helpful to creating socio-economic and employments opportunities for natives, followed by 47 (31.33%) of the respondents who agreed 19 (12.67%) remained neutral. However 13 (8.67%) respondents strongly disagree, 34 (22.67%) were dis agree that mega developmental works are improved socio-economic opportunities in war-on-terror effect areas.

5.5 Rehabilitation/reconstruction tasks of Tribal areas and Swat was a great challenge for government

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	12	8.0	8.0	8.0
Disagree	14	9.33	9.33	17.33
Neutral	26	17.33	17.33	34.66
Agree	65	43.33	43.33	78.0
Strongly Agree	24	16.0	16.0	94.0
Don't Know	9	6.0	6.0	100.0
Total	150	100.0	100.0	

Figure 5.5

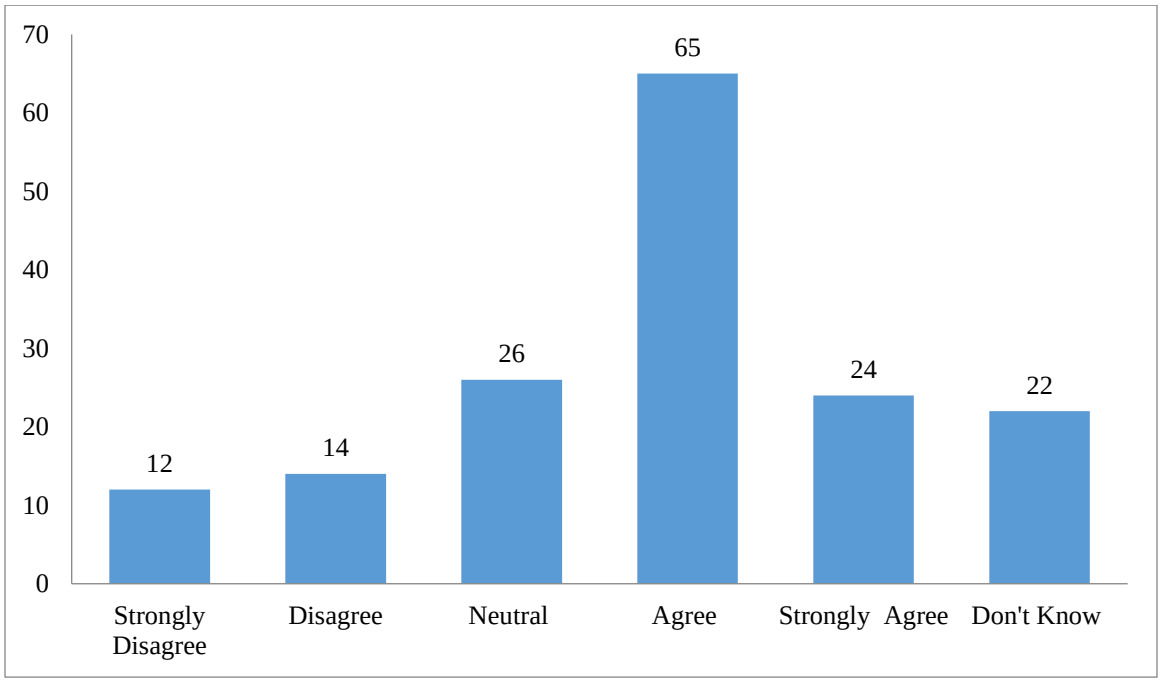
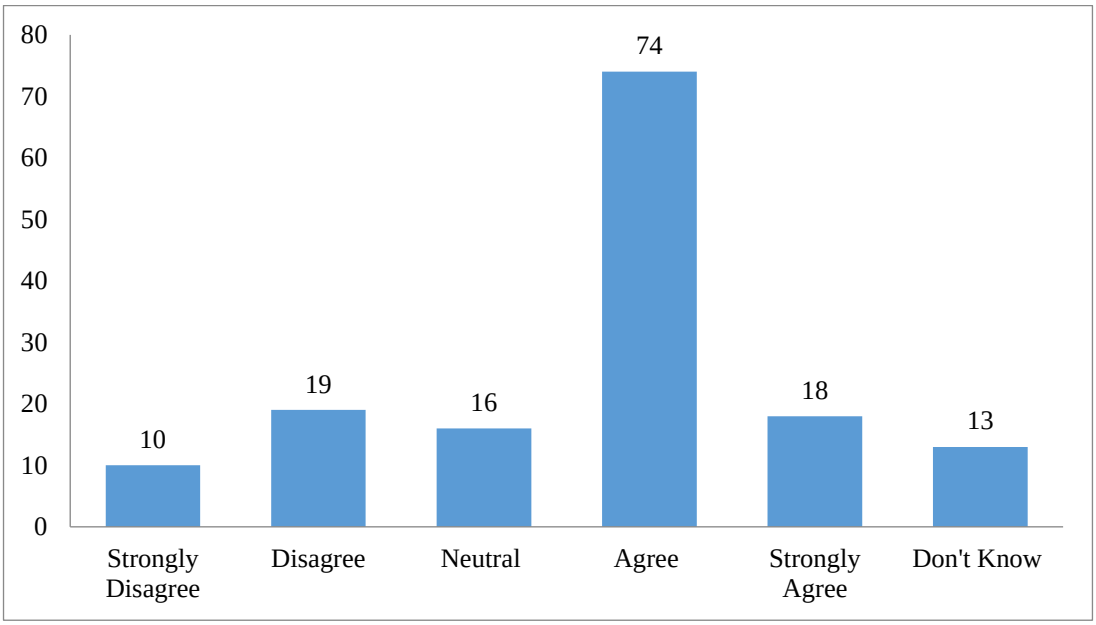


Table 5.5: Rehabilitation/reconstruction tasks of Tribal areas and Swat was a great challenge for government as they wish. 65 (43.33%) respondents agree the notion while 24 (16%) strongly disagree, 12 (8%) were strongly disagree, 14 (9.33 respondents disagree that the rehabilitation/reconstruction in tribal areas and Swat was a great challenge for armed forces and the government.

Table 5.6: Government could succeed to overcome militancy through developmental strategy

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	10	6.67	6.67	6.67
Disagree	19	12.66	12.66	19.33
Neutral	16	10.67	10.67	30.0
Agree	74	49.33	49.33	79.33
Strongly Agree	18	12.0	12.0	91.33
Don't Know	13	8.67	8.67	100.0
Total	150	100.0	100.0	

Figure 5.6

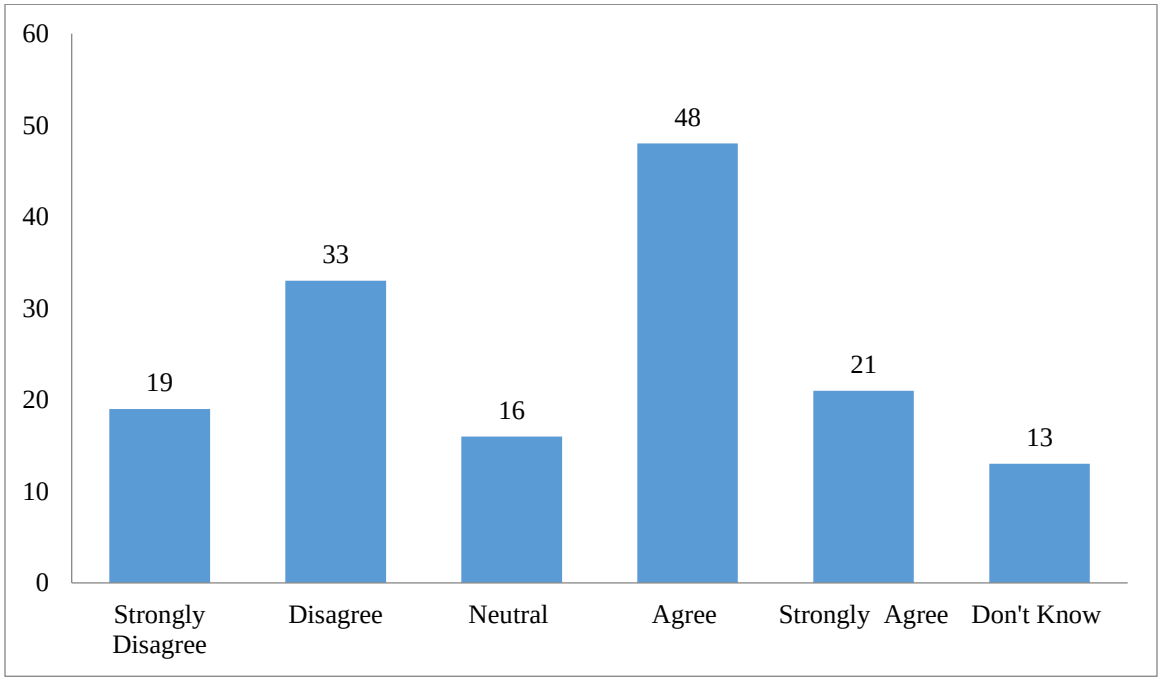


Table/Figure 5.6 illustrate that the government could succeed to overcome militancy through developmental strategy in tribal areas and Swat (65 out of 150) of the respondent are agreed, 16% (24) strongly agree, 12 (8%) were strongly agree, 14 (9.33%) disagree, 17.33% (26) remained neutral. The results of table shows that the government will succeed to overcome militancy through developmental projects in war-on-terror effect areas.

Table 5.7: People are satisfied with government restoration/reconstruction activities in Tribal areas and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	19	12.67	12.67	12.67
Disagree	33	22.0	22.0	34.67
Neutral	16	10.67	10.67	45.33
Agree	48	32.0	32.0	77.33
Strongly Agree	21	14.0	14.0	91.33
Don't Know	13	8.67	8.67	100.0
Total	150	100.0	100.0	

Figure 5.7

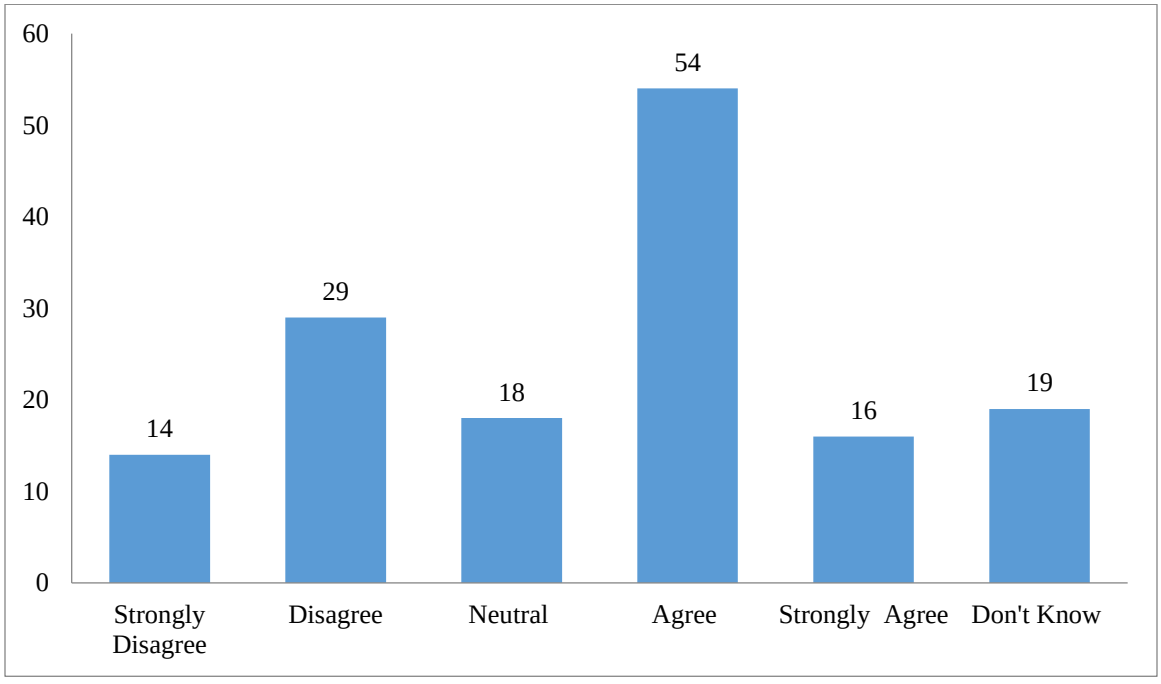


Table/Figure 5.7 show the satisfaction on government restoration/ reconstruction works in tribal areas and Swat, 21 (14%) respondents were strongly agreed, 48 (32%) were agreed. 19 (12.67%) strongly disagree, (33 22%) respondents disagree while 16 (10.67%) remained neutral and 13 (8.67%) of the respondents remained don't know to the notion.

Table 5.8: Developmental activities bring positive change in living condition of the tribesmen

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	14	9.33	9.33	9.33
Disagree	29	19.33	19.33	28.66
Neutral	18	12	12	40.66
Agree	54	36.0	36.0	76.66
Strongly Agree	16	10.67	10.67	87.33
Don't Know	19	12.67	12.67	100.0
Total	150	100.0	100.0	

Figure 5.8

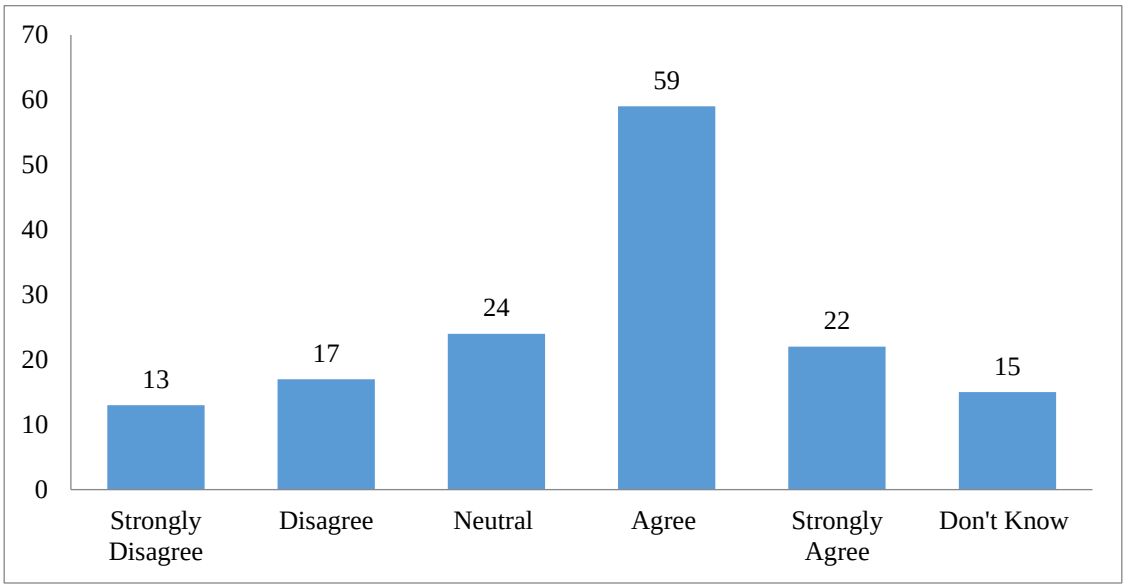


Table/Figure 5.8 the results presented in the table indicates that out of 150 respondents 54 (36%) agreed, 16 (10.67%) were strongly agreed with the developmental works bring positive change in living conditions of the tribesmen. 18 (12%) were neutral and 19 (12.67%) remained don't know to notion.

Table 5.9: Army Corps of Engineers have played a leading role to restored normal life through civil engineering works in tribal areas and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	13	8.67	8.67	8.67
Disagree	17	11.33	11.33	20.0
Neutral	24	16.0	16.0	36.0
Agree	59	39.33	39.33	75.33
Strongly Agree	22	14.67	14.67	90.0
Don't Know	15	10.0	10.0	100.0
Total	150	100.0	100.0	

Figure 5.9

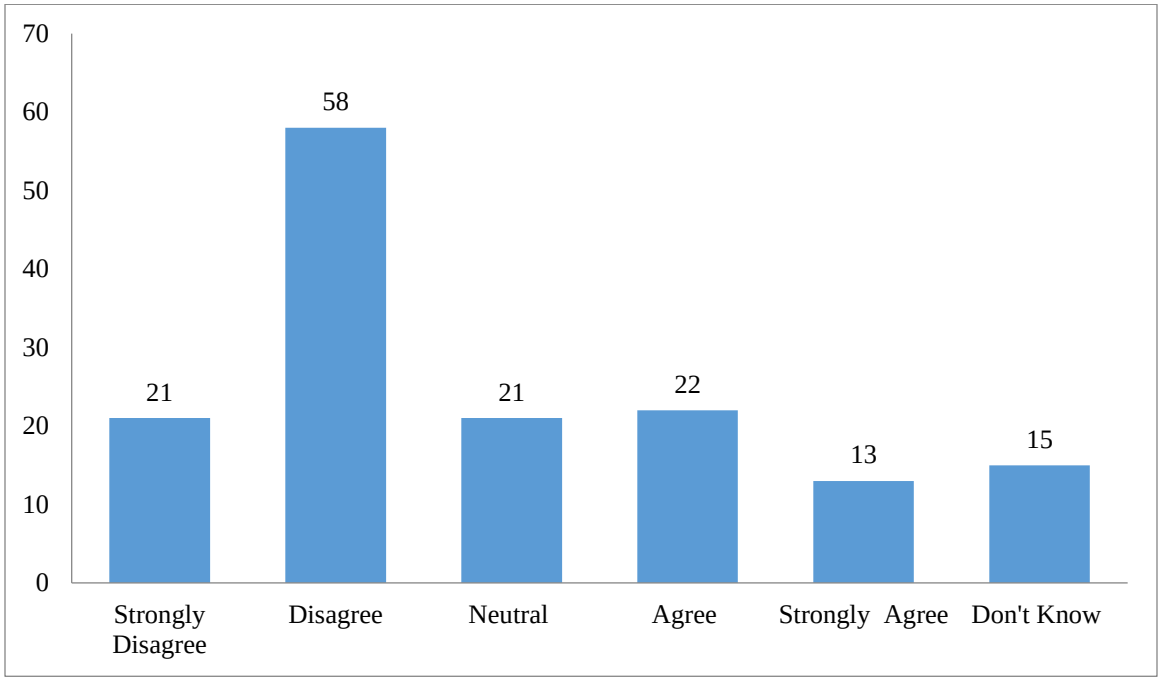


Table/Figure 5.9 illustrate that majority of the respondents, 59 out of 150, the (39.33%) were agreed and 22 (14.67%) were strongly agreed that the Corps of Army Engineers has played a leading role to restored normal life through civil engineers works. 13 (8.67%) respondents were strongly disagree, 17 (11.33) were disagreed.

Table 5.10: The urban and remote are populations are equal beneficiary of developmental project

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	21	14.0	14.0	14.0
Disagree	58	38.66	38.66	52.66
Neutral	21	14.0	14.0	66.66
Agree	22	14.67	14.67	81.33
Strongly Agree	13	8.67	8.67	90.0
Don't Know	15	10.0	10.0	100.0
Total	150	100.0	100.0	

Figure 5.10

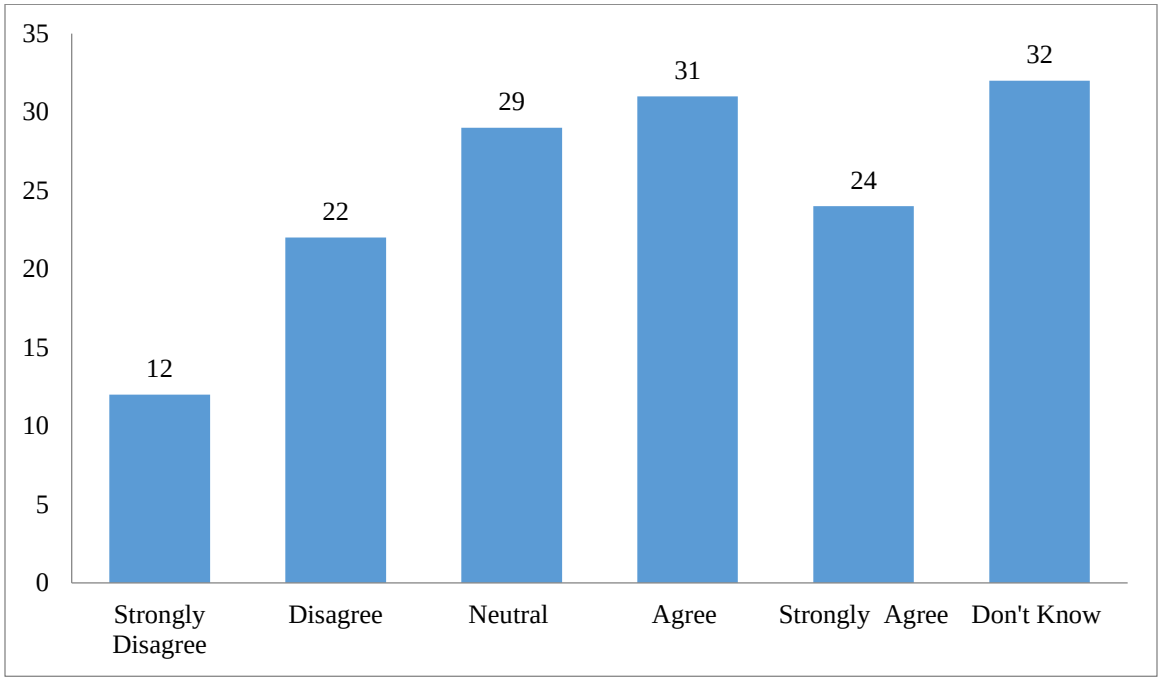


Table/Figure 5.10 shows the Urban and Remote areas population are equal beneficiary of developmental works in tribal areas and Swat, majority of respondents 58 out of 150, (38.66%) disagreed, 21 (14%) were strongly disagreed and only 22 (14.67%) agree and 13 (10%) respondents strongly agreed and 21 (14%) remained neutral.

Table 5.11: The new constructed roads network are helpful to improved trade activities in tribal districts and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	12	8.0	8.0	8.0
Disagree	22	14.67	14.67	22.67
Neutral	29	19.33	19.33	42.0
Agree	31	20.67	20.67	62.67
Strongly Agree	24	16.0	16.0	78.67
Don't Know	32	21.33	21.33	100.0
Total	150	100.0	100.0	

Figure 5.11

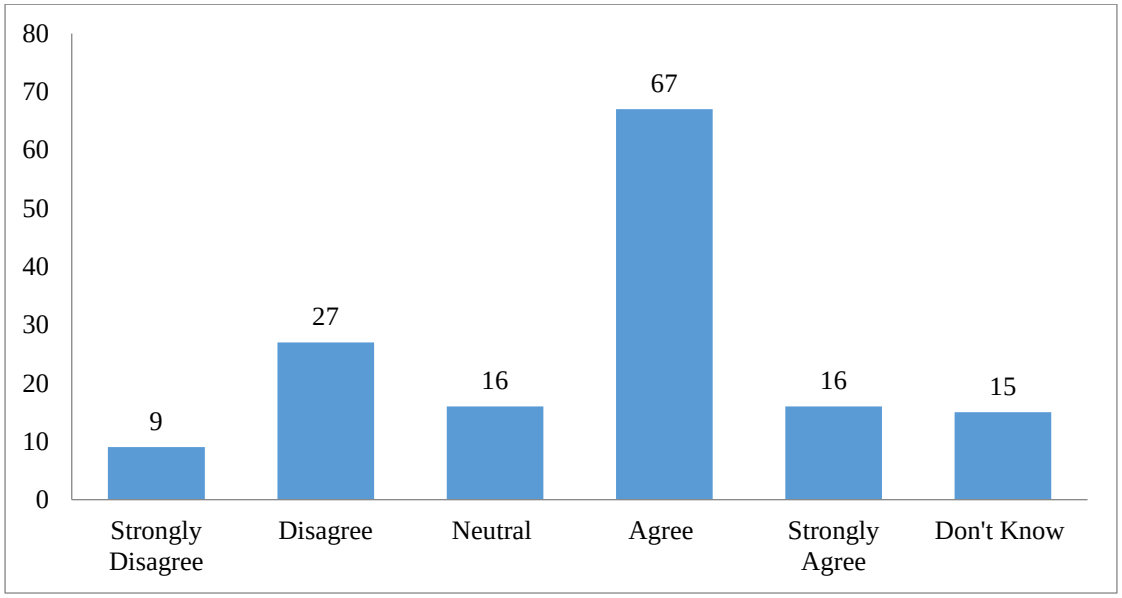


Table/Figure 5.11 illustrate that the majority of the respondents 32 (21.33%) were don't know that the reconstructed roads network in tribal areas and Swat are helpful in promoting peace and stability in war-on-terror effect areas but the 31 (20.69%) are agreed, 24 (16%) respondents strongly agreed and 29 (19.33%) were remained neutral.

Table 5.12: The positive impacts of government development strategy are seemed in tribal areas and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	9	6.0	6.0	6.0
Disagree	27	18.0	18.0	24.0
Neutral	16	10.67	10.67	34.67
Agree	67	44.67	44.67	79.33
Strongly Agree	16	10.67	10.67	90.0
Don't Know	15	10.0	10.0	100.0
Total	150	100.0	100.0	

Figure 5.12

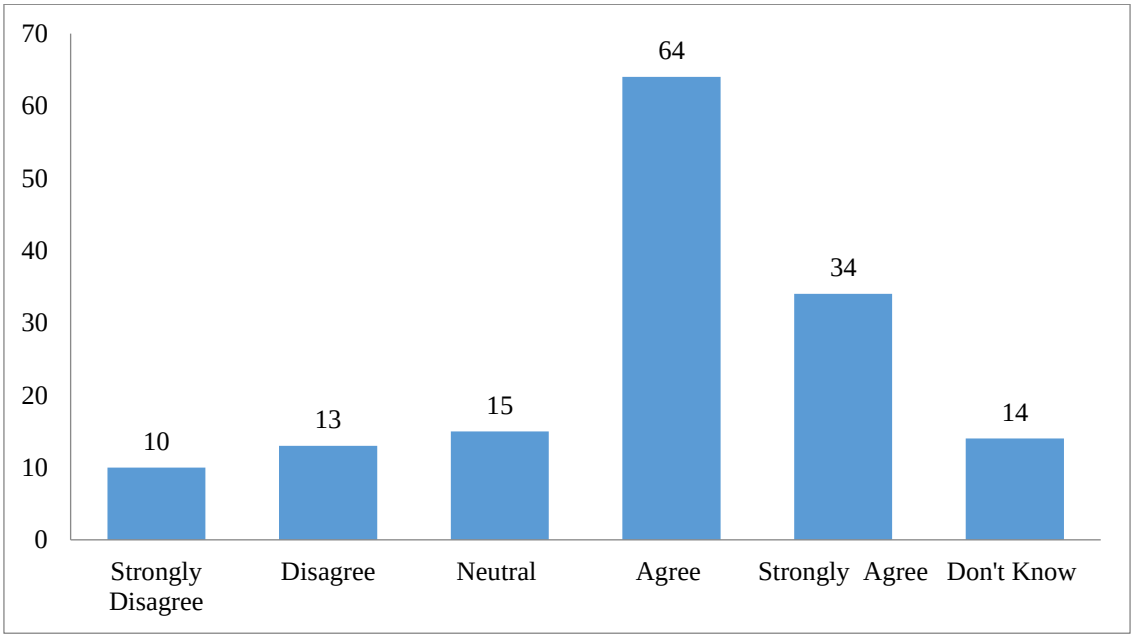


Table/Figure 5.12 a large percentage of the respondents show in the above table/figure, that the positive impacts of government developmental programs are seemed in Tribal Areas and Swat. Out of 150 respondents, 67 (44.67%) were agreed, 16 (10.67%) were strongly disagree, 27 (18%) disagree, 9 (6%) were strongly disagree and 16 (10.67%) respondents remained neutral.

Table 5.13: The reconstruction/developmental works are helpful to improve peace and stability in north-west tribal areas and Swat

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	10	6.67	6.67	6.67
Disagree	13	8.67	8.67	15.33
Neutral	15	10	10	25.33
Agree	64	42.67	42.67	68.0
Strongly Agree	34	22.67	22.67	90.67
Don't Know	14	9.33	9.33	100.0
Total	150	100.0	100.0	

Figure 5.13



Table/Figure 5.13 shows that majority of the respondents are agreed to the notion that the new constructed communication infrastructure in tribal areas and Swat are helpful to improve peace and stability, 64 (42.67%) respondents were agreed, 34 (22.67%) were strongly agreed, 13 (8.67%) were disagreed and 15 (10%) respondents were remained neutral of the notion.

5.2 Analysis of Qualitative Interviews

In this section researcher represent the finding of interviews conducted from fifty respondents of tribal areas and Swat that ensure the relationship between the contributions of Army Engineers and restoration / reconstruction of tribal areas and Swat post war-on-terror. Leading member of tribal areas and Swat were interviewed the tribal areas and Swat were asked to explain the relationship between corps of engineers and the development of tribal areas and Swat post war-on-terror and flood 2010. The finding of qualitative interviews were generated while applying thematic analysis of collected interviews.

5.2.1 The Services of Corps of Army Engineer in the Way of Rehabilitation / Reconstruction of Tribal Area and Swat

The majority of the respondent who were interviews to agreed that the corps of engineer has provided immediate / effective services post war-on-terror and specially in the field of road network and post flood 2010.

5.2.2 Development Projects are Helpful to Maintain Piece and Stability in Tribal Areas and Swat

Mostly of the member acknowledged that Government developmental works helpful to creating better communication facilities and approving legal business. Some of the respondent are unsatisfied with government developmental works they said that the government should introduce more developmental project in effected areas because that areas were completed destroyed with militancy activities.

5.2.3 Corps of Army Engineer Troops has been played a Leading Role in Restoration Developmental Projects of Tribal Areas and Swat

Majority of the respondents show their consensus that the crops of Army engineers has played effective role in very difficult condition to restore road structure and repaired government's institution buildings like schools, hospitals and other buildings specially post flood 2010 it provided bridges and maintain road communication.

5.2.4 Mega Developmental Projects are Creating Legal Business Activates in Tribal Areas and Swat

Majority of the respondents were acknowledged that the mega project are helpful to creating jobs and long term facilities. But government has failed to introduce mega development projects in Swat and Tribal Areas. Mostly of the respondent said that government should promote tourism industry in Swat and utilize natural resources in Tribal Areas so that the legal business activities will increased in the areas.

5.2.5 Government Could Succeed to Won the Heart and Mind of The Effected People of Tribal Areas and Swat Through Developmental Strategy

Majority of the respondents who were interviewed disagree that the government could succeed to won the heart and minds of the effected people through developmental policies, they said, it is very difficult for the people of tribal areas and Swat, they forget their shocks of militancy but with the passage of time and state positive policies the situation will normalized. Some of the respondent said that government should provide security and better living facilities and resolve the basic issues of militancy in tribal area and Swat.

5.2.6 The People of Tribal Areas and Swat are Satisfied with the Government Restoration / Reconstruction Works

Majority of the respondents are semi-satisfied with the government restoration / reconstruction projects introduced by government so far in tribal areas and Swat. According to them the situation is better and normal social activities are increased. They said that government should maintain peace and established effective local government system. Some of the respondent are satisfied with government developmental projects. According to them government should introduce more developmental projects because tribal areas and Swat are less developed then other areas of Pakistan.

5.2.7 Urban and Remote Areas Population are Equal Beneficiary of Developmental Projects of Tribal Areas and Swat

Majority of the respondents are disagreed that the urban and remote areas population are equal beneficiary of developmental projects they said that the remote areas are less developed and mostly of the areas deprived from basic life facilities like education, health, drinking water and communication connectivity. Some of the respondents satisfied with government developmental projects, according to them the remote area of all provinces of Pakistan are less developed because the population of remote areas are scattered, government unable to provide better facilities randomly.

5.2.8 Rehabilitation / Reconstruction of Tribal Aras and Swat was Great Challenge for Government

Mostly of the respondents are acknowledge that the state writ was challenged in tribal areas and Swat and militant because the serious threat for Pakistan. The reestablished the state writ and restoral / reconstruction was also a great challenged for Armed Force and the government of Pakistan. according to respondent's security forces and the government has fight against militancy and the flood disaster fields. Security forces including civil population has sacrificed their life in the way of restoration peace and stability in war-on-terror effect area.

5.2.9 Respondents Suggestion to maintain peace and stability in tribal area and Swat

The majority of the respondents are suggest that, government should resolved root level cause of the militancy in priority basis and provides basic facilities to the effected area. Government should introduce reforms in administration and political system in tribal districts and Swat. government should provide facilities of drinking water, quality education and health. Government should include these areas in main stream through constitutional reforms. Some of the respondents suggest that security forces and the government strictly attention on defeated elements and developmental works should remain continued in effected areas.

5.3 Conclusion

Corps Army of Engineers has been playing its primary role, supporting the army's offensive and defensive operations, unlike other arms and services. It's also providing peacetime services in national development through civil engineering works, that promoting socio-economic activities in the country. Corps of Engineers troops always ready to help the nation in any natural disasters, providing their relief/rehabilitation services. Since independence Corps of Engineers have been making a sizeable contribution in the national mega developmental works i.e., construction of Karakoram Highway, Khanpur Dam, Makaran Costal Highway and various mega projects. The construction of western route of CPEC in Baluchistan areas was a test of Corps' professional capability, it also completed before estimated time. The construction of Karakoram Highway is a unique contribution of Corps of Engineers in the national development, now it became the highest paved international road in the world. China-Pakistan Economic Corridor as a part of China One Belt One Road, crossed from Karakoram mountain range, through the Khunjerab Pass. The China Pakistan Economic Corridor original plan envisaged passing through Khunjerab-Gilgit, to Gawadar seaport this route will prove itself as the "Economic Gateway" for China and Pakistan and provide regional land connectivity among the Central Asia Republics.

North-west tribal areas are one of least developed parts of Pakistan, the majority of its population lives below the national poverty line. Its suffered a great deal due to ongoing conflicts post 9/11 and paid a heavy price in the shape of sacrificing of citizens, destruction of socio-economic infrastructure and deep impacts on tribesman lives. Monsoon floods, 2010 also badly effect the north-west tribal areas and Swat, such areas became disaster zones. Post war-on-terror, government launched various rehabilitation/reconstruction projects to restored and maintain the infrastructure of war-on-terror effected areas. These reconstruction programs were completed by Corps of Engineers troops under life threat condition. Developmental projects not only helpful to promote peace/security situation and also provides better living facilities to the people.

In the whole process the Corps of Engineers troops not only fight against militants, they also committed to undertaken developmental projects in war-on-terror affected areas. These works were a great challenge for Sappers because, the works was done under hostile circumstance and hard weather condition. The new roads networks provides connectivity between remote and urban areas and also improved trade activities and comfort journey. Such effective contributions also recognized by national and international level because of its quality works.

Swat Valley became battlefield of militants in the beginning of 2007, they captured important locations of Swat. Militants not only sieged the people of Swat and also serious threats for Pakistan' sovereignty. Government of Pakistan has been tried to controlled situation by different options such as peace agreements with terrorist leadership. During such approaches period the militants has enhanced their strength and increased anti-state activities in Swat areas and Tribal belt regions. When reconciliatory administrative efforts failed and writ of state was grossly challenged. The government established its writ back against militants in the Swat Valley, in 2009, through successful military operation. Military and terrorists' activities has destroyed physical and social infrastructures of Swat Valley.

Government was launched Quick Impacts Projects, with the support of International Community, to restored/repaired the infrastructure and return IDPs to their homes. Such projects were started under the security umbrella of Armed Forces, because of hostility situation. Corps of Army Engineers troops provided its services in the way of reconstruction of roads network, schools and government's damaged buildings. Its still undertaken various developmental projects in war-on-terror affected areas such development works are helpful to sustain peace, stability, solidarity and prosperity in the region. A quantitative survey questionnaire was distributed to 150 students of five KPK universities and the members of North-West Tribal Areas and Swat territory and Qualitative Interviews were conducted with 50 leading persons of both effected areas, tribal districts and Swat. Finding of the both Survey and interviews show that there is a strong relationship between the Corps of Army Engineers contributions and the restoration/maintaining peace in war-on-terror effected areas of (KPK) Pakistan.

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Annex: A

QUALITATIVE INTERVIEWS

Questionnaire (Open-ended) from Respondents of Tribal District and Swat

Name: _____

Name of Respondent: _____

Occupation: _____Mobile no _____

Length of time at the company: _____

Location: _____ Date _____

What are the services of Corps of Army Engineers in the way of rehabilitation/reconstruction of Tribal areas and Swat region?

_____
_____
_____

Do you think that the development projects are helpful to maintain long-term peace and stability in tribal areas and Swat?

_____
_____
_____

Are you understand that Army Corps of Engineers troops have played a leading role in reconstruction and development of north-west Tribal areas and Swat?

_____
_____
_____

Are you feel that the mega development projects are creating legal business activities in tribal areas and Swat?

_____
_____
_____

Do you understand the government could succeed to won hearts and minds of affected peoples through reconstruction/developmental strategy?

_____
_____
_____

Are you think that the people of tribal areas are satisfied with the government reconstruction/development schemes?

_____
_____
_____

What is your opinions about reconstruction and mega development projects that introduced by government in Tribal Areas and Swat?

_____
_____
_____

Are you think that urban and remote areas population are equal beneficiary of development projects of Tribal areas and Swat?

_____
_____
_____

Do you think that the rehabilitation/reconstructions of tribal Areas and Swat was a great challenge for government?

_____
_____
_____

What are your suggestions to maintain long term peace and stability in Tribal areas and Swat?

_____
_____
_____

Annex: B

QUANTITATIVE SURVEY

Questionnaire (Closed-ended) for respondents

Name _____ Age_____ Occupation _____

Birth Place_____ Mobile Number_____

NIC _____ Date _____

	Agree	Strongly agree	Disagree	Strongly disagree	Neutral	Don't know
Do you understand the mega development projects are providing socio-economic opportunities for natives?						
Do you think that rehabilitation /reconstruction tasks of Tribal areas and Swat was a great challenge for government?						
Do you understand the government could succeed to overcome militancy through developmental strategy?						
Are you satisfied with government restoration/reconstruction activities in Tribal areas and Swat?						
Do you understand the development activities bring positive change in living condition of the tribesmen?						
Do you think that Army Corps of Engineers have played a leading role to restored normal life through civil engineering works in tribal areas and Swat?						

	Agree	Strongly agree	Disagree	Strongly disagree	Neutral	Don't know
Do you think that the urban and remote area population are equal beneficiary of developmental project?						
Do you think that new constructed roads network are helpful to improved trade activities in tribal districts?						
Are you understand the positive impacts of government developmental strategy are seemed in tribal areas and Swat?						
Do you consider that the reconstruction/developmental works are helpful to improve peace and stability in north-west tribal areas and Swat?						