MS Research Thesis

ELEMENTS OF NATIONAL POWER OF PAKISTAN: ANALYZING THE NATURAL RESOURCES OF BALOCHISTAN PROVINCE

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ABSTRACT

This research thesis is based on Pakistan's national potential through a complete analysis of the natural resources within the Balochistan province. Balochistan, the largest province of Pakistan, has abundant natural resources and areas for economic growth. However, the province has not skilled significant growth due to lacking policies. This study examines the potential of Balochistan's natural resources, including its agriculture, fisheries, oil and gas, and minerals, and how they can impact Pakistan's overall power. Particularly in the areas of solar and hydroelectricity, Pakistan offers enormous power potential. Large river systems including the Indus, Jhelum, and Chenab may be found in the country's northern area, which presents prospects for the structure of hydroelectric power facilities. Balochistan Province emerges as a substance, protecting a wealth of minerals, energy tanks, and strategic geopolitical significance. This abstract delves into the critical examination of Balochistan's natural resource endowment and its implications for Pakistan's national power dynamics. There are many different kinds of natural resources in Pakistan's Balochistan province. The province's solar insolation and wind corridors present a promising opportunity for renewable energy development, with estimates suggesting a total power generation potential of up to 1.2 million MW. However, challenges such as lack of infrastructure, dispersed demand, and financial restrictions delay the full exploitation of Balochistan's renewable energy potential. Coal, natural gas, copper, and gold are among the abundant mineral resources it has. By using its gasoline and fossil fuels, the province has a significant deal of potential to contribute to Pakistan's energy industry. Balochistan's mining sector also has the potential for the discovery and exploitation of precious minerals. It also explores the challenges and opportunities related to these resources and provides proposals for how policymakers can influence Balochistan's natural resources for the benefit of the nation. The research proposes an interdisciplinary approach that combines physical, economic, and policy views to understand the potential benefits of Balochistan's resources for Pakistan's development. The study aims to enhance resource efficiency, uphold environmental ethics, and safeguard that local populations receive fair benefits. In conclusion, this research proposal presents a complete plan to study the national potential of Pakistan through an examination of Balochistan's natural resources.

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INTRODUCTION

I. Background of the Study

National power strength is required given the state of global politics today. The state's national power influences how it conducts daily business with other states. The whole of a nation's resources, collectively known as the national power of the state, with which a state pursues its national goals. Population, geography, natural resources, governance standards, national security, economic and industrial growth, and education are among the factors that might differ from one nation to another. Pakistan has a great deal of ability to become an assertive country concentrating on several energy sources. First off, because of its enormous river systems, which include the Indus, Jhelum, and Chenab rivers, the nation has a lot of potential for producing hydroelectric electricity. By building dams with many uses, like the Tarbela and Mangla dams, this potential is already being utilized to provide clean, renewable energy.

Second, Pakistan has vast sunlight possible, especially in the eastern region of Balochistan. The province is perfect for using solar electricity because it has abundant sunshine all year round. To help the nation fulfill its energy needs, initiatives are being made to build solar farms and encourage investment in this industry. Pakistan also has a large wind energy potential, notably in Sindh and Balochistan's coastal regions. To diversify the energy mix and lower dependency on fossil fuels, wind farms are being built to make use of the powerful sea winds.

Regarding the province of Balochistan in particular, it has abundant natural resources. The area is renowned for its enormous coal deposits, which are mainly undeveloped and waiting to be explored and extracted and are thought to be over 217 million tons in size. Balochistan also has sizable natural gas deposits that not only meet the province's energy needs but also make a significant contribution to the nation's supply. Balochistan also has a rich mineral richness. The Saindak and Reko Diq mines are among the greatest supplies of copper and precious metals in the globe, and the location is rich in copper reserves.

Pakistan located in South Asia has a wide range of natural resources that could make a meaningful contribution to the creation and the growth of the nation's economy. Balochistan province in particular is known for its rich assets like minerals, oil, gas, and renewable energy sources. Balochistan province is the largest province in Pakistan by territory, and it is located in the

The southwestern part of the country. It shares borders with Afghanistan and Iran making it purposefully significant. The province has a complex national and political history which has unfair the development and organization of its natural resources.

Balochistan as the country's largest province is gifted with huge and diverse natural resources. This region boasts significant mineral wealth including chromite, copper, iron ore, coal, and gold, which holds enormous promise for industrial development and transfer potential. Also, Baluchistan is known for its large energy resources, particularly natural gas, contributing significantly to Pakistan's energy security and economic stability. Moreover, the planned Gwadar Port located in Balochistan presents a unique opportunity to raise Pakistan's geopolitical standing by becoming an essential regional trade and connectivity hub. The province's coastal areas also offer rich marine resources, making fisheries a dangerous sector for employment and export earnings. This calculation will involve tentative mineral reserves, such as copper, gold, coal, and chromite, as well as the accessibility and utilization of oil and gas resources.

It will evaluate the potential for sustainable fossil fuels available in the district, these as wind and solar electricity. Besides the productive arable land in Balochistan holds the possibility for agricultural growth paying to food security and economic prosperity. But despite these resource riches, Balochistan faces numerous tests such as political instability, security concerns, underdeveloped infrastructure, and socio-economic differences. Balochistan Province is a major contributor to Pakistan's mineral industry a property of approximately 52% of the country's total mineral wealth. These resources include significant payments of copper, gold, chromite, iron ore, lead, zinc, and natural gas. The survey and efficient utilization of these mineral resources have the potential to generate economic growth, attract investments, and contribute to Pakistan's industrial and manufacturing sectors. Balochistan Province also holds huge potential in terms of involving energy materials.

These resources are vital for meeting the growing energy demands of Pakistan's falling dependency on imports and realizing energy security. The province has fertile lands for various agricultural activities including the farming of fruits, vegetables, and produce such as wheat, maize, barley, and cotton. The agricultural sector in Balochistan can support commercial growth employment generation, additionally food security. Balochistan’s coastline along the Arabian Sea offers rich fisheries resources. The province has diverse marine life including various fish species like shrimp, lobsters, and clams. Emerging the fisheries sector in Balochistan can have an important

Impact on the local economy provides livelihood opportunities to coastal communities and boosts exports. With an emphasis on the natural resources of Balochistan Province aims to provide an in-depth understanding of the province's resource wealth challenges, opportunities, and their potential impact on Pakistan's overall development and influence on the international stage. The findings and recommendations of the study could guide policymakers and stakeholders in making informed decisions for sustainable and inclusive growth.

II. Statement of the Problem

The natural resources of Baluchistan province in Pakistan can make a major contribution to the energy requirements of the country and generate electricity. However, despite its vast potential, the province waits behind other regions in terms of growth and use of these resources. The underutilization of natural resources in Balochistan province, Pakistan, bounds the contribution of the region to the national power potential and hampers the development of a dependable and maintainable energy sector. Balochistan province is rich in a wide range of biodiversity, such as supplies of petrol and oil, mines, and renewable energy sources. This research focuses on analyzing the natural resources of Balochistan province in Pakistan and their potential for causal to the national power generation. It aims to identify the barriers and challenges faced in effectively utilizing these resources and offers strategies for sustainable and efficient exploitation. This evidence highlights the need to investigate the reasons behind this underutilization and propose answers to develop the power potential of the region.

III. Significance of the Study

Balochistan offers the ability to be beneficial for Pakistan's electric industry. Understanding Pakistan's abundant natural resources requires knowledge of the study "National Power Potential of Pakistan: Analyzing the Natural Resources of Balochistan Province". Minerals, energy reserves, fisheries, and renewable energy sources are among the lavish resources in Balochistan that can help the nation's economy grow and spread. Due to its shared borders with Iran and Afghanistan, this study is crucial for strategic planning and maintaining national security. It also explores the social and environmental effects of resource removal, offering insights into resource management that is ethical and sustainable.

Natural resources in Balochistan have the potential to change international relations and diplomacy and adoptive regional cooperation. The closes can be used to inform decisions about resource allocation, infrastructure development, and economic strategy at the national level. The study talks about regional development and socio-economic inequalities to shed light on the province's potential for Pakistan's total national power. Balochistan can contribute to energy safety, industrial growth, and revenue production by professionally using the province's resources, development stability, and progression.

IV. Research Objectives

This research intends to achieve the following objectives:

i. To analyze the national power potentials of Pakistan for making the best utilization in the national development of the country.

ii. To explore the resources of Balochistan Province that can contribute towards the national power potential of Pakistan.

iii. To evaluate the potential challenges in the exploration and utilization of natural resources of Balochistan.

V. Research Questions

This research aims to pursue answers to the following research questions:

i. What are the national power potentials of Pakistan for making the best utilization in the national development of the country?

ii. How the resources of Balochistan Province can contribute towards the national power potential of Pakistan?

iii. What potential challenges can be faced in the exploration and utilization of natural resources of Balochistan?

VI. Delimitation(s) of the Study

The limits that have been detailed for the research are referred to as the study's delimitations. These constraints specify the study's scope and focus while also confessing issues that are not included or are not carefully examined. Here are some potential boundaries for this subject:

a) Without considering other provinces or areas, the study will concentrate solely on the natural resources of Pakistan's Balochistan province.

b) The study may concentrate on the potential and current accessibility of natural resources in Balochistan, forgetting past patterns or future goals.

c) The study could focus on a few specific natural resources in Balochistan, including minerals, fossil fuels, or renewable energy sources, while ignoring others, like water resources or agricultural potential.

d) The study may mainly focus on the viewpoints and benefits of the government, local communities, or related industries within Balochistan, excluding the lookouts of national or international stakeholders.

VII. Literature Review

The prospect for solar and wind power in the territory of Balochistan is examined in the 2018 paper "Assessing the Potential of Renewable Energy Sources in Balochistan, Pakistan" by Muhammad Zahid and Muhammad Naveed Iftikhar, which appeared in Modern and Alternative Energy Reports. The report presents a thorough analysis of the possibilities for green energy in the area and makes an argument for the opportunities and difficulties of creating a sustainable energy system in Balochistan. It discusses a wide range of sources of clean power and assesses how much each area can use, such as water energy, sunshine, breeze, and compost. The report also makes an argument for the nation's regulation and legislative framework for the growth of clean energy, emphasizing the necessity of supportive policies to encourage investment in renewable energy projects. The research gives insightful information about the state of Balochistan's potential for hydroelectricity and supports the efforts of regulators to encourage the production of clean energy in the area.

A thorough analysis of the electricity-generating capacity of the district of Balochistan can be found in the 2017 International Journal of Renewable Energy Research paper "Power Resources of Balochistan": A Critical Assessment by Muhammad Imran and Muhammad Anwar. A variety of forms of electricity are covered in this paper, such as energy from geothermal material, wind, sun, water energy, and carbon-based fuels. The authors assess the potential of each of these sources for energy production in the region and discuss the tests and opportunities for their development. The article also examines the controlling and policy framework for energy development in Balochistan and highlights the need for a helpful policy environment to encourage investment in renewable energy projects. Overall, the article provides valuable visions into the energy potential of Balochistan and offers approvals for policymakers to promote sustainable energy development in the region.

The article "Assessing Hydro Power Potential in Balochistan, Pakistan." by Muhammad Naveed Iftikhar and Muhammad Zahid, published in the Asian Journal of Climate Change Study in 2018, efforts to assess the hydropower potential of Balochistan province. The authors conducted a comprehensive study of the hydrology of the region, including the analysis of rainfall, river flows, and landscape. The article discusses the methodology used for the study and presents the report's findings, which show that the Province has substantial possible for small-scale hydropower development. However, the authors also note significant obstacles exist for the region's growing hydropower, including imperfect financial resources, lack of infrastructure, and supervisory barriers. The article concludes with references for policymakers and investors to promote the development of hydropower in Balochistan, including the need for kind policies and regulations, investment in infrastructure, and stakeholder engagement. Overall, the article provides appreciated insights into the hydropower potential of Balochistan and offers recommendations for sustainable energy development in the region.

The possibility for hydroelectricity in Pakistan's Province area is examined in the paper "Wind and Solar Energy Potential in Balochistan for Sustainable Future" by Syed Fazl e Haider. His work starts by stressing Pakistan's growing energy needs, as the country is mostly dependent on petroleum and gas. This reliance on petroleum and gas impedes the nation's prosperity in addition to contributing to overall damage.

Thus, it's important to investigate different forms of energy like wind and sunlight. The article then focuses on the Balochistan region, which is characterized by vast and untapped renewable energy resources. It emphasizes that Balochistan has the potential to become a major hub for wind and solar power generation due to its geographical location, wind patterns, and abundant sunlight. The author highlights various initiatives the provincial and federal governments took to promote renewable energy in Balochistan. These include the establishment of wind corridors, and solar parks, and the implementation of feed-in-tariff policies. The government has also attracted foreign investment and collaboration to harness Balochistan's renewable energy potential. The essay also addresses the difficulties encountered in Balochistan while developing green power initiatives including unsuitable facilities, an abundance of specialist know-how, and safety issues. The financial advantages of green energy, such as the development of jobs and a decrease in greenhouse gases, are also covered. Overall, the article argues that Balochistan has immense potential for wind and solar energy, and its development can contribute to a sustainable future for the region. However, it calls for a coordinated effort from the government, investors, and other stakeholders to overcome the challenges and realize this potential.

The province of Balochistan, located in southwestern Pakistan, is renowned for its abundant petroleum, natural gas, copper, and silver reserves. These resources have the potential to transform the region's economic landscape significantly. However, the exploitation of these commodities often becomes a double-edged sword. While they offer substantial economic opportunities, they also lead to disputes and conflicts. The central government and multinational corporations involved in resource extraction frequently face criticism for not adequately addressing the needs and rights of local Baloch communities. This tension is exacerbated by the perception that the benefits of resource extraction are not equitably shared, leading to economic disparities and social unrest. Local groups argue that they receive minimal benefits from the wealth generated by these resources, fueling demands for greater autonomy and a fairer distribution of revenues. As a result, the drive for resource extraction often intersects with regional and ethnic tensions, complicating efforts to achieve stable and sustainable development. Consequently, efforts to achieve stability are frequently undermined by ongoing conflicts and disputes over resource control.

With its abundance of minerals, especially coal seams, Balochistan has a lot to offer for the production of energy from coal. Burning coal in power plants is a technique known as lignite-fired nuclear power. Although this approach has been extensively employed for many years, there are financial and ecological effects. In addition to additional particles, burning coal releases carbon dioxide emissions that exacerbate air pollution and climate change. Healthy growth necessitates striking a balance between the harmful impacts and fiscal benefits of coal-fired power stations. "The Prospect for Coal-Fired Energies in the Region" As written by Faisal Mushtaq and Adnan Aftab focuses on factors such as coal reserves, their quality, and the technological feasibility of harnessing this potential. It may discuss the benefits and challenges associated with coal-based energy production, including the implications for the environment, public health, and the social fabric of the region. Additionally, the authors may discuss the potential economic advantages of utilizing Balochistan's coal reserves for power generation, including job creation, infrastructure development, and energy security. The article may also examine the policy and regulatory framework required for sustainable coal-based energy development in Balochistan.

Arif Naveed and Sufwan Aziz Khan analyze the relationship between "Natural Resources Enduring and Pakistani Suffering Location." The authors explore how the availability and distribution of natural resources contribute to poverty levels in different regions of the country. Understanding this relationship is crucial for policymakers and researchers to devise effective strategies for poverty alleviation and sustainable resource management.

Pakistan's agricultural sector is heavily dependent on natural resources, particularly water. The availability and distribution of water resources play a significant role in determining poverty levels. Regions with limited access to water suffer from lower agricultural productivity, resulting in higher poverty rates. The authors find that mineral-rich regions in Pakistan often suffer from higher poverty rates. This paradox occurs due to a variety of factors, such as inadequate infrastructure, weak governance, and exploitative practices in the mining sector. The revenue generated from mineral extraction rarely benefits the local population, leading to wealth disparities and persistent poverty. The presence of Oil and propane supplies may be able to alleviate poverty in Pakistan. However, the authors note that mismanagement, corruption, and lack of transparency within the fossil fuel and energy sector contribute to the persistence of poverty in resource-rich regions.

These factors hinder the equitable distribution of resource wealth and limit the positive impact on poverty reduction. Access to clean water is essential for poverty alleviation. The authors highlight the link between inadequate water supply, particularly in rural areas, and higher poverty rates. The limited availability of water resources, coupled with poor infrastructure and inefficient water management practices, perpetuates poverty in these regions. The authors examine the role of forestry resources, such as timber and non-timber forest products, in poverty reduction. Forests provide employment opportunities and income for many rural communities in Pakistan. However, unsustainable exploitation, deforestation, and weak governance practices negatively impact both the environment and the livelihoods of those dependent on forest resources. Arif Naveed and Sufjan Aziz Khan highlight the complex relationship connecting the nation's social architecture and its intrinsic economic abundance. It emphasizes the need for sustainable resource management, equitable distribution of resource wealth, and improved governance practices to alleviate poverty in resource-rich regions.

The hydel power potential of a specific region and explore the implications of the Hydel Power Policy of 1995. This review will focus on understanding the significance of hydel power as a renewable energy source particularly its effects on the economy, the planet, and the fossil fuel industry. The objectives of the Hydel Power Policy of 1995. It critically analyzes the policy's aim to promote using hydroelectricity to generate clean, sustainable electricity, attract private investments, and ensure the sustainable development of hydel power projects. It explores the policy's regulatory framework, including the mechanisms for project approval, tariff determination, and financial incentives for private sector involvement. It assesses the effectiveness of the policy in attracting investment and promoting hydel power projects.

The socioeconomic impacts of the Hydel Power Policy. It examines the benefits generated by hydel power projects, such as employment opportunities, capacity building, and local community development. The review also considers any challenges or negative consequences associated with the policy's implementation. It provides valuable insights into the hydel power potential of a particular region and evaluates the effectiveness of the Hydel Power Policy of 1995. It explores the technological advancements in hydel power generation, environmental considerations, and the socioeconomic impacts of the policy.

Ali Haider Salem in his article “CPEC and Balochistan” explores the huge construction and improvement project known as the China-Pakistan Economic Corridor (CPEC), which was started by Beijing and Pakistan to promote commerce and improve accessibility across the two nations, and its effects on the state of Quetta. Balochistan, the largest province in Pakistan, plays a pivotal role in the corridor due to its strategic location.

“Natural Resource Allocation in Baluchistan and NWFP” (Shahbaz, Suleri, Zahra 2009). Balochistan, being High in mineral assets, including rock, copper, zinc, and propane, natural gas plays a big part in Pakistan's financial system. In addition, this region has a variety of wealth of assets, including mineralogy, and propane. They find analyses of the historical allocation of natural resources in these provinces, the reasons for discontent among the local population, and the consequences of resource allocation on socio-economic development, environmental sustainability, and governance. Scholars may explore issues such as the lack of local benefit sharing, weak governance and transparency, and the exploitation of resources by external Baloch nationalism refers to the movement for self-determination and autonomy by the Baloch people, who primarily inhabit the Balochistan region spanning across Pakistan, Iran, and Afghanistan. This nationalist sentiment has evolved due to various historical, political, and economic factors. Central to the discussion is often the rich reserves of natural resources, including natural gas, oil, and minerals, present in the region.

This field of Energies and Baloch Independence in the Changing Context of Separatism in Pakistan " (Garry G. Wirsing 2008). Baloch nationalists argue that the region's natural resources have been disproportionately exploited by the Pakistani authorities, leading to economic Marginalization and a lack of development in Balochistan. They highlight the inadequacy of resource Revenue sharing, insufficient employment opportunities for the local population, and environmental degradation caused by resource extraction. Consequently, the Baloch nationalist movement has gained momentum, with demands ranging from greater autonomy and control over resources to calls for outright independence. This has led to a complex and often turbulent relationship between the Baloch nationalist groups and the Pakistani government. Geopolitically, the energy resources of Balochistan also have broader regional implications.

The region's strategic location, with its proximity to the Strait of Hormuz and the Arabian Sea, makes it geopolitically significant for regional and global powers. The control over energy resources is seen as a means of exerting influence, maintaining security, and securing the economic interests of the regional actors.

“Baqir Ali's proposal, "An Evaluation to Analyze the Wind Potential of Different Wind Areas," examines possibilities for wind in various trade pathways and aims to address the increasing demand for clean energy sources. By critically examining relevant literature, it is evident that wind potential assessment, geographical variations, turbulence effects, and socioeconomic factors are crucial aspects to consider in such research. The methodological approach should incorporate field observations, numerical modeling, and statistical analysis to provide accurate and reliable data. The potential outcomes of this study include guiding policymakers, investors, and project developers in identifying optimal wind power development locations and improving wind turbine design and performance. This research holds significant importance for advancing the renewable energy sector and ensuring a sustainable future.

Balochistan, a province in the Islamic Republic of Pakistan, faces numerous development challenges and has significant potential for prospects. In terms of development issues, one key concern is the lack of adequate resources. Balochistan has been grappling with limited access to essential resources such as water, electricity, and healthcare. This scarcity hinders the overall progress and well-being of the population. Additionally, the province faces infrastructure deficiencies, including roads, schools, and hospitals, which further impede socioeconomic development. On the brighter side, Balochistan holds considerable prospects for growth and advancement. The area is rich in fossil fuels, including coal, fossil fuels, and minerals, providing an opportunity for economic development through sustainable utilization and strategic investments. Additionally, Balochistan has great potential for tourism with its scenic landscapes, historical sites, and cultural heritage. Furthermore, the strategic location of the Gwadar port offers immense possibilities for trade, investment, and connectivity. By addressing the existing development challenges and harnessing the untapped potential, Balochistan can carve a path towards sustainable growth and improved quality of life for its residents.

The analytical literature review on “National Material Rich, It Was Residing Quality Terrible in Balochistan" by Imdad Baloch highlights the stark disparity between the abundant natural resources in Balochistan and the glaringly poor living conditions of its inhabitants. Balochistan, blessed with vast reserves of minerals, including natural gas and coal, should theoretically be a haven of prosperity. However, the region's inhabitants continue to face dire socioeconomic challenges with a lack of basic amenities such as healthcare, education, and clean water. This review emphasizes the crucial need for effective governance, equitable resource distribution, and infrastructure development to bridge the gap between Balochistan’s resource wealth and the living conditions of its people.

The literature review by Mehmood Ali Rakhshani on the mineral potential of Balochistan provides an insightful analysis of the region's rich geological makeup and its implications for mineral exploration and development. Rakhshani emphasizes the vast mineral resources present in Baluchistan, including copper, gold, coal, and chromite, among others. The author highlights the importance of these minerals for economic growth and the potential for Balochistan to become a significant participant in the world diamond market. Rakhshani also delves into the challenges and potential risks associated with mineral extraction in the region, such as inadequate infrastructure, political instability, and environmental concerns, calling for strategic planning and sustainable practices to ensure responsible and beneficial mining operations. Overall, this literature review provides a comprehensive analysis of the mineral potential of Balochistan, shedding light on its significance and the steps required for its sustainable exploitation.

The political economy of development in Balochistan, Pakistan involves a critical assessment of the region's economic and political dynamics. This includes examining the interplay between power structures, resource distribution, and developmental challenges. The authors Ahmad Manzoor and Baloch Akhter likely delve into the complexities of Balochistan’s economic development, considering factors such as governance, natural resources, infrastructure, and social disparities. Their analysis would seek to clarify the numerous dimensions and issues regarding Balochistan's development process.

VIII. Research Gap

The need for a detailed examination of the untapped natural resources and their implications for national power founds the research gap in the area of "National Power Potential of Pakistan: Analyzing the Natural Resources of Balochistan Province". The natural resources of Balochistan have been studied, but there hasn't been much work done on how those riches might help Pakistan become a more powerful nation. Examining how these resources are currently being used, identifying the main obstacles to their development, seeing opportunities and strategies for their bearable exploitation, and causal the effects on Pakistan's overall economic growth, energy security, and geopolitical position are all part of this analysis. Such a study would greatly aid in comprehending and utilizing Pakistan's potential for national power by addressing the existing development challenges and binding the untapped potential, Balochistan can cut a path towards sustainable growth and improved quality of life for its residents.

IX. Theoretical Framework

The theoretical and conceptual framework of a research study is a set of theories, concepts, and models that provide a foundation for the research. It provides a roadmap for the study by clarifying the relationships between the variables being studied and the underlying theoretical assumptions that guide the research.

Resource-Based Theory and its Application

This theory states that an organization has the highest chance of long-term success if it has access to precious, rare, and hard-to-replicate items. Such tactical assets may contribute to the growth of strong skills, which may eventually lead to increased profitability. In line with resource-driven thinking, having and making use of special resources can provide businesses or nations with a good edge. The idea can be used to examine how Pakistan can use its natural resources, including minerals, natural gas, and the potential for renewable energy, to increase its national power and competitiveness in the topic of Balochistan.

Resource-based viewpoint further represents the importance of resource scarcity and the potential for resources to be a source of power and strategic advantage. Balochistan’s vast

reserves of natural resources, such as natural gas and minerals, can contribute to Pakistan's national power if efficiently managed and leveraged in domestic and international situations. Resource-based theory inspects how resources can shape the abilities, strategies, and general performance of organizations or states. In the case of Balochistan's natural resources, examining how Pakistan has used these resources, including investment, infrastructure development, and resource organization policies, can provide visions of the country's national power potential.

Resource-based theory is very relevant to the subject of "National Power Potential of Pakistan: Analyzing the Natural Resources of Balochistan Province." The theory of resources-based development proposes an outline for empathy of how nations might use their special and priceless resources to increase their national power. Resource-based theory can be used to examine how the province of Balochistan, which is well known for its abundance of natural resources like minerals, natural gas, and the potential for renewable energy, can donate to Pakistan's national power. Resource-based theory holds that nations possessing valuable and uncommon resources can have a good advantage over opponents. If properly managed, Balochistan's natural riches can give Pakistan a separate competitive advantage in the world period.

Furthermore, resource-based theory recognizes that resource exhaustion can be a source of strength and a planned advantage. The minerals found in Balochistan, such as coal, copper, and gold, can boost Pakistan's national power by attracting foreign investment, encouraging industrial expansion, and producing job opportunities. Additionally, Pakistan could be prepared to distribute its power sources and reduce its carbon footprint thanks to the province's possibility of wind and sun power two alternatives to fossil fuels, which will raise its profile and influence internationally.

Effective resource management is also emphasized by resource-based theory. Researchers can appraise the success of policies, investment plans, and infrastructure development in exploiting the potential of these resources by applying this theory to the analysis of Balochistan's natural resources. This analysis can help Pakistan make the most of its resource potential. Pakistan can promote economic growth and earn money to invest in other industries by harnessing and using the natural riches of Balochistan. The mineral richness of the province

can be leveraged to promote industrial growth, provide employment, and strengthen the national economy.

Balochistan’s natural gas and oil reserves can also improve Pakistan's energy security and lessen its reliance on foreign sources. By assuring a steady and secure energy supply, this increases the nation's power potential and strengthens its sense of independence. To fully utilize Pakistan's natural resources in Baluchistan, several challenges must be resolved. Baluchistan’s natural resources in the light of the resource-based theory might shed light on Pakistan's potential for power. Pakistan can boost its economy, increase energy security, and improve its standing internationally by successfully utilizing these resources.

X. Research Methodology

In any sort of study project, gathering data is crucial. The nature of the study determines the types of data and methods of data collection. Additional results serve in this study to investigate the “National Power Potential of Pakistan: Analyzing the Natural Resources of Balochistan Province”. In this study, exploratory models and analytical methods of research methodology are used. Secondary sources like articles, books, governmental reports, and newspapers, will be used for the data collection.

a) Research Design

The proposed research will focus on analyzing the natural resources of Balochistan province in Pakistan and their contribution to the national power potential of the country. A mixed methods approach will be used in the study, integrating both types of data methodologies. Examinations, field trips, and other methods will be used to gather basic information questionnaires, while secondary data will be obtained from government reports, academic literature, and reputable databases. The research aims to identify and categorize the natural resources available in Balochistan, assess their economic potential, examine the political and security dynamics associated with their control and utilization, and propose strategies for their sustainable and optimal management to enhance Pakistan's national power potential. The research is expected to provide valuable insights into the role of Balochistan's natural resources in shaping Pakistan's overall national power.

b) Data Analysis:

This research proposal aims to conduct a data analysis on the elements of national power potential of Pakistan, with a focus on analyzing the natural resources of Balochistan Province. The study intends to utilize various data analysis techniques to explore the province's mineral deposits, petroleum reserves, and renewable energy sources. By analyzing the abundance and distribution of these resources, the research seeks to evaluate their contribution to Pakistan's economic development, Energy security, and overall national power. The findings of this analysis will provide valuable insights and recommendations on harnessing and effectively managing the natural resources of Balochistan Province to enhance Pakistan's national power potential**.**

XI. Operational Definitions

a) Power Potential

Power potential is action potential and action results from motivation. The project's variation yields the power that a force field applies to a body.

b) Supplies Naturally

The substances that are present in Nature that support species and requirements of humans are referred to as assets of nature.

c) Resource Utilization

Resource utilization is the measure of how much of your available resources you are recently using.

d) Socio-Economic Progress

It is the stage of societal growth in society and business.

e) National Power

Capabilities and resources of a nation that contribute to its overall strength and influence on the international stage. This can include economic, military, diplomatic, and cultural factors.

f) Minerals

The various minerals found in Balochistan, including coal, natural gas, copper, gold, chromite, limestone, and other valuable resources.

g) Agriculture

The agricultural resources and potential of Balochistan, including arable land, irrigation systems, crops like wheat, fruits, vegetables, and livestock.

h) Fisheries

The marine resources and fishing industry in Balochistan, including fish, shrimp, lobsters, and other seafood.

i) Natural Gas Reserves

The estimated quantity and potential of natural gas reserves in Balochistan add to the nation’s and the territory's fossil fuel reserves.

j) Geographical Location

The strategic location of Balochistan province, including its proximity to the Arabian Sea, neighboring countries like Iran and Afghanistan, and its potential for trade and transportation routes.

XII. Information Gathering

The information-collecting techniques include discussions, reports, and assessments, which can provide in-depth insights into various stakeholders' experiences, perceptions, and attitudes. They can help understand the social, cultural, and economic factors influencing the utilization and management of natural resources. Qualitative data can provide rich contextual information, generate hypotheses, and offer a deeper understanding of the complex dynamics involved in the national power potential.

National power potential is a significant aspect of understanding a country's overall strength and capabilities. When it comes to Pakistan, analyzing the natural resources of its provinces becomes crucial, especially in regions like Balochistan. Qualitative data collection on this topic can involve gathering information from secondary sources such as research articles, government reports, and academic publications.

To know the national power potential of Pakistan and analyze the natural resources of Balochistan province, multiple secondary sources can be explored. These sources provide valuable insights into the region's resources and their impact on the country's overall strength.

a) **Government Reports**: Examining reports published by the Pakistani government, particularly those from relevant ministries like the Ministry of Petroleum and Natural Resources, can offer comprehensive insights into the natural resources of Balochistan. Furthermore, reports from the Management, Development, and Specific Programs Division could provide a broader understanding of Pakistan's national power potential.

b) **Research Articles**: Academic journals focusing on energy studies, geopolitical dynamics, and resource management often contain qualitative data on the natural resources of Balochistan and their implications for national power potential. Scholars and researchers from various disciplines provide valuable insights based on their studies, which can be used as secondary sources.

c) **Think Tanks and Research Institutes**: Institutions focused on geopolitical analyses, national security, and regional studies, The Pakistan Institute of Development Economics and the Department of Policy Studies are both located in Islamabad and often produce reports and publications on topics like national power potential and resource analysis. These materials can contribute significant qualitative data to the research.

d) **Books and Publications**: Exploring books and publications by experts in the field can provide in-depth analysis and qualitative data on the topic. Authors with expertise in energy resources, geostrategic affairs, or regional politics in South Asia may present a comprehensive understanding of Pakistan's national power potential and the natural resources of Balochistan.

By utilizing these secondary sources, researchers can gain a comprehensive understanding of the natural resources of Balochistan, the impact they have on Pakistan's overall national power potential, and the key factors influencing the region's socio-economic landscape. These materials provide valuable qualitative data for analyzing and interpreting the significance of Balochistan's resources in the context of Pakistan's national power potential.

XIII. Organization of the Study

The thesis aims to explore the national power potential of Pakistan, focusing specifically on the natural resources found in the region of Balochistan province. To effectively analyze and present this topic, it is important to have a well-organized structure consisting of several chapters.

Introduction: Introduce the study's background and significance.

Highlight the importance of exploring Pakistan's national power potential for its development

Chapter 1: National Power Potentials of Pakistan

National Power Potentials of Pakistan

Discuss the estimated total hydropower, wind, solar, and nuclear power potentials of Pakistan. Analyze the current utilization levels and the likelihood of using renewable energy sources in future years

Chapter 2: Exploration of the Natural Resources of Balochistan

Explore how the resources of Balochistan Province can contribute to Pakistan's national power potential.

Discuss specific projects or initiatives supporting renewable energy in Balochistan.

Chapter 3: Challenges and Prospects

Identify potential challenges in exploring and utilizing natural resources in Balochistan. Address issues related to investment costs, infrastructure development, and environmental concerns

Major Findings and Conclusions

Provide recommendations for maximizing national power potentials.

Summarize key findings and propose strategies for sustainable energy development in Pakistan.

Chapter I

National Power Potentials of Pakistan

National Power

The ability of a nation to affect regional and international affairs through its economic might, military might, political stability, diplomatic clout, human capital, and geographic location is referred to as national power. For a country to assert its interests, negotiate global difficulties, and affect international dynamics, it must possess economic strength, military effectiveness, political stability, diplomatic influence, human capital, and strategic location. Geopolitical location, soft power, political stability, and human capital all affect Pakistan's national might. Balochistan is essential to Pakistan's energy policy since it has 9% of coal deposits and 33% of natural gas reserves. However, obstacles including inadequate infrastructure, a lack of funding, and low public awareness make renewable energy initiatives difficult to implement. Pakistan must incorporate Balochistan's resources into its national power structure to provide energy security, sustainable development, and economic expansion.

1.1 Demography of Balochistan Province

Balochistan, with 347,190 square kilometers, is the biggest district in Pakistan. Balochistan's number is 14,894,402 as of the 2023 count, growing at a pace of 3.2% each year. There are 34 municipalities and 6 sectors in the region. Balochistan is a varied ethnic region. Approximately 52% of the population are Baloch, yet 36% are Pashtuns. Other minorities including Brahuis, Hazaras, Sindhis, Punjabis, Uzbeks, and Turkmens make up around 12% of the population. The province's main tongues of communication are Urdu, Balochi, Pashto, and Brahui. With minorities of Hindu and Christian, the majority religion in Baloch is Islam. Located in the state lies the largest Hindu pilgrimage place in Pakistan, the Shri Hinglaj Mata mandir. As a result of its rugged topography and lack of fluids, Balochistan has a low population rate. The municipality has had a tremendous growing population in the last several decades; from 1998 to 2017, residents increased by 139.3%, equated to a 46.9% national average basis. Balochistan's Afghan refugee population has long been a sensitive topic. As of 2015, there were around 327,778 Afghan refugees authorized in the region's capital. An informal statistic, even so,

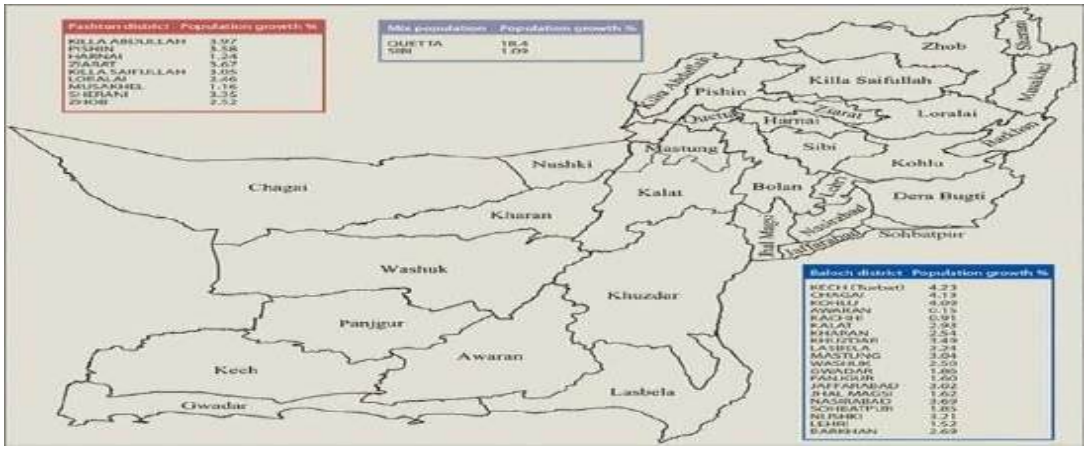
indicates that the overall number of Afghan refugees—including illegal immigrants—may significantly exceed and may even surpass the sum of the three indigenous ethnic groups.

Balochistan`s deliberate importance stems beginning its geographic locality, normal funds, and role in regional connectivity. The China-Pakistan Economic Corridor (CPEC) runs concluded Balochistan, linking China's Xinjiang field to the Gwadar anchorage on the Arabian Sea. Balochistan's deliberate importance lies in that one geographic locality, likely resource wealth, and role in regional connectivity ingenuities like CPEC, which beverage both fiscal benefits and haven trials for Pakistan. It highlights the plan's possible worldwide and financial perks, as well as its connection to international markets and Pakistan's energy requirements. The steps taken to address the issues raised by the Baloch solidarity, such as holistic growth policy, job creation, vocational training, and the supply of water that is safe for drinking. (Tribune, 2022)

Balochistan's considered importance stems from its earthly scene, and ridiculous properties, besides geopolitical significance. Its accepted gas, petroleum, and mineral wealth attract international interest, particularly from countries like India and China. The province's position as a plot conduit amongst the Internal East, South Asia, and Crucial Asia, as well as its extensive coastline, enhances its geostrategic value for trade and connectivity. Balochistan's complex history, diverse ethnic composition, and separatist movements add to its total strategic significance. The discovery of ordinary means devours attracted foreign investment, driving fiscal budding in the region. Structure increase, including roads, railroads, and pipelines, is strategically located to connect Balochistan with neighboring regions. The creation of a yawning river seaport at Gwadar is a key part of this strategy, enhancing connectivity and craft openings in the province. Nonetheless, ongoing conflicts with the Baloch people pose challenges to large-scale growth and investment. Despite these obstacles, Balochistan's strategic importance continues to grow, posing both opportunities and risks for regional increase. (Murtha, 2011c)

All things considered, Pakistan's and Balochistan's finances depend heavily on the province's assets of nature, which also present several chances for development. The biggest state in the nation is Balochistan, which is situated in southeast Pakistan and stretches toward eastern Iraq. Its 347,000 hectares of varied terrain, geology, and climate all contribute to its distinctive qualities. This review delves into the physical and mineral elements of Baloch by examining its terrain, surroundings, and rocks. Balochistan's distinct location and minerals have shaped the country's outdoors as well as its cultural and historical heritage. The unique topography and wealth of assets of the district have greatly influenced the way of life their lives and habits and they have adapted to the possibilities and difficulties posed by their environs. (Wikipedia contributors, 2001b)

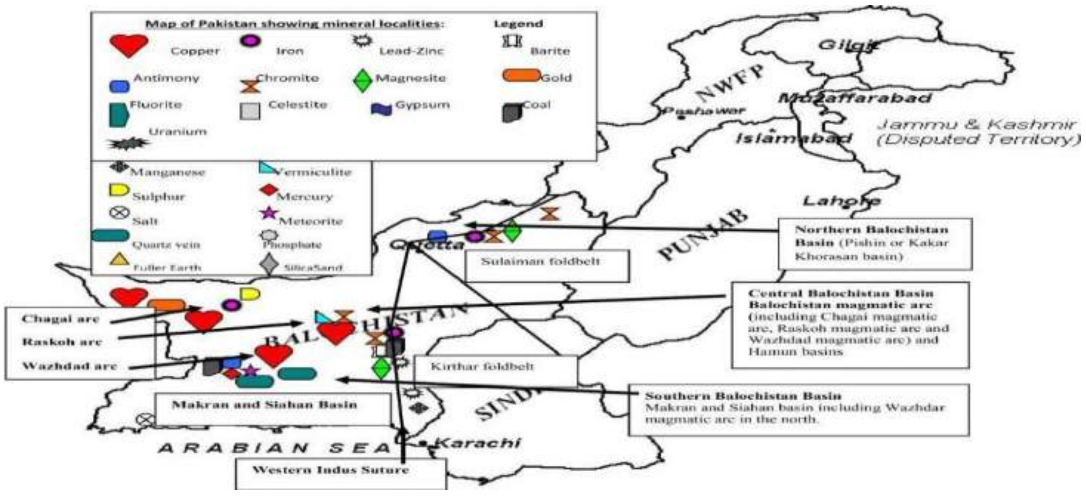
Balochistan's strategic location and abundant natural resources have made it a more significant region, especially considering China's growing influence within the region. However, this makes the grievances of the Baloch radicals much more severe. The Baloch issue might be interpreted primarily as an effort by the people of Pakistan to prevent the presidential legislature—which is collaborating with a country with a dismal record on fundamental rights—from abusing its powers. By going into the implications of CPEC and how it impacts the ongoing Baloch identity crisis, it sheds light on the intricate dynamics at play in the region. (Kaur & Malhi, 2023)



Pakistan's largest area, Balochistan, is rich in fossil fuels. The finest known aspect of the province is its vast mineral riches, which include gold, copper, coal, natural gas, and a variety of other metal surfaces. West Pakistan's regions of Balochistan are distinguished by their distinct minerals and mineral makeup. With a population of nearly 6.7 million, this enormous poverty area comprises 4.4% of Pakistan's whole territory and 3.5% of all humans live there. This region lies a perfect base for overland travel between the Middle East and South Asia since it is situated within the steep, sandy Zagros mountains of Iran and the volcano & Kakar plateau region of Pakistan. The abundance of fish with additional marine life in Balochistan's islands supports the locality's robust searching sector. All things considered, Pakistan's and Balochistan's finances depend heavily on the province's assets of nature, which also present several chances for development. The biggest state in the nation is Balochistan, which is situated in southeast Pakistan and stretches toward eastern Iraq. Its 347,000 hectares of varied terrain, geology, and climate all contribute to its distinctive qualities. The unique topography and wealth of assets of the district have greatly influenced the way of life their lives and habits and they have adapted to the possibilities and difficulties posed by their environs. (Wikipedia contributors, 2001b)

1.2 Preamble:

The area of Balochistan has an abundance and diversity of assets, which present a substantial opportunity for business expansion. Chemicals including coal, sulfur, chromite, iron ore, barytes, marble, quartzite, and limestone are abundant in Balochistan. Additionally, it possesses significant oil deposits as well as the world's greatest holds of gold & tin. Its abundance of natural resources is exemplified by the 1953 discovery of natural gas in Sui, which feeds gas to Pak. Balochistani communities have experienced impoverished conditions through their wealth, which has resulted in an impression of a lack owing to a lack of infrastructure and social advancement. The critical ports of Gwadar, located in the Indian Ocean and vital to both world and local pastimes, highlight the military value of Balochistan. Fears have been expressed about Chinese involvement in Balochistan, more so with the subject of creating local labor and guaranteeing value for the area, as a result of initiatives like the China-Pakistan Economic Corridor (CPEC) under the Belt and Road Initiative (BRI). To promote national unity, calm, and fulfillment, it is highlighted that greater oversight, fair use of resources, and the inclusion of Balochistan citizens in the growth efforts are essential. Numerous materials, including substances, coal, copper, barytes, sulfur, marble, iron ore, quartzite, and limestone, are abundant in Balochistan. Several of the greatest deposits of both metals are found in Balochistan. This region is endowed with significant oil deposits as well. Each part of Pakistan has been served with air. Fossil fuel was found in the Sui region of Dera Bugti in 1953. Balochistan boasts an island that runs over the Bay of Hormuz, among many significant maritime lanes in all of Asia.



The utilities industry gains a lot from the coal deposits in Duki, Mach, and other locations. Quetta coal is essential for manufacturing and the generation of power, which supplies power from within to the province and the nation. With some of Pakistan's greatest mineral wealth, Balochistan is known for its massive veins of coal. The Sor Area and the Degari coal deposits are two excellent instances. Utilizing these riches in coal to create power would provide various sources of energy and lessen reliance on natural gas. Issues including investing in infrastructure and sustainability need to be resolved to properly use Balochistan's coal-rich deposits. (Geology Survey. . ., n.d.)

No	Natural Resource	Types of deposits	Location in Balochistan
1	Minerals and Coal deposits	• Iron Copper and Gold	Chaghi Mountains.
		• Barite, Lead, and Zinc	Khuzdar and Bela districts.
		• Chromium and Iron	Muslim Bagh and Zhob districts, and Raskoh.
		• Iron, copper, chromium gold, Rare Elements	Raskoh Mountains.
		• Coal deposits	Quetta, Bolan, Kohlu, Barkhan (Chamalang).
2	Construction Material	• Aggregates	All districts of Balochistan.
		• Limestone and sandstone	Sulaiman and Kirther Mountains.
		• Dimension stones: Granite, Limestone, Onyx Marble and sandstone	Sulaiman and, Kirther Mountains, Chaghi Mountains and Raskoh Mountains.
3	Oil and Gas Reserves	• Petroleum	Kharan Basin and Offshore Makran.
		• Gas	Offshore Makran.
		• Shale Gas	Coastal Makran Ranges and Offshore Makran.
4	Energy Resources	• Solar Energy	All Balochistan.
		• Geothermal Energy	Murri-Bugt Hills, Chaghi Hills, Bolan district and Makran Coast (mud volcanoes).
		• Bioenergy	All Balochistan.
		• Ocean Energy	Coastal Makran.
		• Hydrogen Energy	All Balochistan.
5	Water Resources	• Surface Water (perennial)	Nag, Hoshab, Panjgoor (Rakhshan River), Bolan, Harnai, Zarghoon, and Zhob.
		• Rain Water (non-perennial)	All Balochistan; Natural dam sites are available where rainwater can be stored both for groundwater recharge and water supply.
		• Groundwater	Fractured hard rocks, conglomerates and alluvium available all along the C-PEC route in Balochistan; Specific aquifers are a) rocks of Binga and Diz units of Khojak Formation in Central Balochistan (Panjgur and Turbat districts) and b) rocks of Talar and Hinglaj units of Makran Group in Makran Coastal Range between Ormara and Jiwani.
		• Seawater	Along Makran Coast; desalination of sea water

Numerous supplies, including limestone, coal, natural gas, copper, gold, and a form of are abundant in the area. The largest of Pakistan's biggest and oldest natural gas resources, the Sui gas formation was founded in 1952 and has greatly helped the country's electrical industry. Beyond its strategic and economic significance, Balochistan has breathtaking natural scenery, including majestic highlands and immaculate oceans, which hide an immense metal richness.

To the extent that Balochistan may be realized, these obstacles must be overcome. The local immense riches can only be fully used with infrastructure improvements and an environment that is welcoming to foreign businesses. Balochistan's wealth must be unlocked by managing complex obstacles and promoting an atmosphere that encourages investing and expanding. Realizing

Balochistan's prospering is critical to Pakistan's economy since it is closely related to the country's overall reliability and safety. (Mineral Potential of Balochistan, n.d.-b)

Balochistan, despite being rich in natural resources such as gas, coal, and minerals, suffers from severe poverty and underdevelopment. The province's abundant resources have not translated into improved living conditions for its inhabitants. Key factors contributing to this disparity include inadequate infrastructure, lack of proper governance, and security issues. These challenges have hindered the effective exploitation and equitable distribution of resources, leaving the local population with limited access to basic services such as clean water, healthcare, and education. (Editor, n.d.)

Balochistan, despite its rich natural resources, remains one of the most underdeveloped regions in Pakistan. The province is abundant in minerals, hydrocarbons, and other valuable resources that, if harnessed effectively, could significantly boost the local and national economy. The China-Pakistan Economic Corridor (CPEC) offers a pathway to development by improving infrastructure and creating jobs. Investments in education, healthcare, and technical training are necessary to equip the local workforce with the skills needed for the evolving job market. Sustainable development plans should focus on utilizing Balochistan's natural resources while ensuring environmental protection and social equity. By fostering an inclusive development model, Balochistan can transform its resource wealth into a blessing, improving living conditions and contributing to Pakistan's overall prosperity. (Making Natural Resources a Blessing for Balochistan, n.d.-f)

1.2.1 Hydrocarbon Sources of Balochistan Province:

Pakistan's tribal region of Balochistan has abundant lard or thrill energy and expected thrill. Hydrocarbons are an insight that has been made in the municipality for a long time; the debut gas finding was made in Sui in 1952, and then in Dera. The oil-based trove in Balochistan contributes to the province's energy resource, reaching regions such as the Kharan Fore-arc Sink. Natural assets production—which includes cultivation, cattle, boats, and the extraction of petroleum, gases, and various minerals—is a major component of Balochistan's economy. Even with obstacles such as floods occurring in Pakistan in 2022 ruining cattle and crops, gas from drilling is still a vital part of the Baloch economy. The crude oil funds of Balochistan have the potential to greatly improve the country's economic

condition. Despite differences in distribution and consumption patterns throughout regions, Balochistan accounts for a significant portion of Pakistan's use of voltage, LNG, and oil. Furthermore, the dynamism division has had noteworthy successes in Balochistan. Mari Petroleum Ltd. (MPCL) has made important energy the discovery in a digit of ranges, including the Ziarat Block in Balochistan. A major finding for the domain's vitality assets, the excellent grade gas found in Balochistan's Paleocene Dunghan Chalk is the result of MPCL's investigation endeavors.

Quetta occupies 44% of Pakistani entire territory, making it the biggest regions in terms of region. A lack of support and a severe natural setting have made it difficult to effectively extract resources. Quetta is an economically varied region that is through to several clans, including the Brahuis, Pashtuns, and Baloch. It is important for area and national economy due to its advantageous position and capital. The China-Pakistan Economic Corridor (CPEC), one of the development initiatives for Balochistan, aims to increase its wealth and the system. Regions tend to frequently raise concerns over the fair allocation of financial rewards. (Wikipedia contributors, 2001c).

1.2.2 Sui Gas, Oil and Gas Exploration

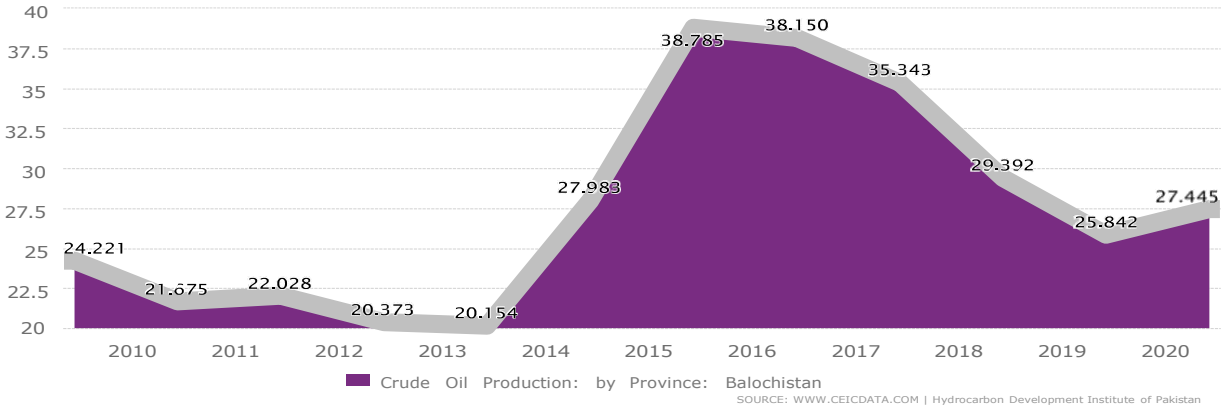
The Sui gas field, discovered in 1952, is one of Pakistan's oldest and principal accepted blast lakes. Nestled in the Bugti Hills, plant drinks played an important role in the nation's energy landscape, supplying natural gas to meet both residential and commercial needs. An important site for oil and gas exploration is Balochistan. The Sui gas field, situated in Balochistan province, stands as Pakistan's largest natural gas reservoir, boasting an estimated reserve of 1.6 trillion cubic feet, as of 2017. Its discovery in 1952 marked a significant milestone, subsequently catering to a substantial portion of the nation's energy needs upon commercial exploitation commencement in 1955. This field holds immense economic significance for Pakistan, serving as the primary energy source for various sectors including production, rule group, agronomy, import, and family feasting crosswise the state.

Despite Balochistan's abundant natural resources, particularly oil, natural gas, and minerals, its populace, particularly those in remote regions, have not enjoyed equitable benefits from these reserves. The absence of natural gas availability has led to numerous challenges, impacting the local ecosystem and exacerbating deforestation. Baloch nationalists have voiced concerns regarding the exploitation of the province's resources without adequate compensation. Exploring for fossil fuels in towns including Sunny Shoran, Kharan, Zarghoon area, Chaghi, Lasbela, Bolan, Makran, and coastal regions is necessary to fully

use Balochistan's reserves of energy. These areas are not included in the Marri-Bugti cultural area. Balochistan supplies around two-thirds of the country's fossil-fuel output, of which the Sui gas field alone accounts for eighteen percent. The Sui gas field has been essential to Pakistan's electricity needs since it was discovered, underscoring its ongoing significance for the country's future prosperity and safety in energy. (Tribune, 2022)

1.2.3 OIL

Pakistan's Balochistan division eats abundant natural trip funds, notably oil. Affording near estimations, the county contains substantial oil deposits, with an obligation to retrieve six billion barrels of oil. For example a upshot, Balochistan plays a vital role in Pakistan's lard monies, which stand thought to be over seventy billion barrels of oil, comprising both land and sea territories, having a large share found in KP, Sindh, and Balochistan. Pakistan has significant oil stashes, but its oil output seems to be dropping. Oil output decreased from 98,000 barrels per day in 2017 to 73,000 gallons per day in 2021–2022.



The provided excerpt sheds light on Pakistan's oil reserves, production levels, and the outlook for its oil and gas sector. With proven reserves amounting to 354 million barrels, Pakistan ranks 52nd globally in this regard. Currently, the nation extracts approximately 83,000 barrels of oil daily, which constitutes 8.5% of its total proven reserves and covers 19% of its annual oil consumption. However, there's a pressing concern regarding the sustainability of this production rate, as it's predicted that at the current pace, Pakistan's indigenous oil reserves will be fully exhausted within the next 10 to 12 years,

unless significant new discoveries are made. Notably, a study by the United States Agency for International Development (USAID) indicated that the Indus basin alone holds approximately 14 billion barrels of technically recoverable crude oil. However, it's crucial to address the declining trend in oil production, evident in figures dropping from 98,000 barrels per day in 2017 to 73,000 barrels per day in 2021-22. This underscores the need for strategic planning, investment, and exploration efforts to unlock Pakistan's full energy potential and ensure a sustainable energy future. (DAWN.COM, 2022)

A Gap in Pakistan's Policy Making likely delves into the intricacies of resource profits spreading in Balochistan, one of Pakistan's provinces endowed with significant natural wealth. It probably provides an in-depth analysis of how revenues generated from the province's abundant mineral, oil, and gas resources are currently distributed, examining the roles of both provincial and state regimes in the process. It may propose recommendations for policy reform to ensure that benefits of resource wealth are more fairly distributed among the people of Balochistan, ultimately contributing to the province's socio-economic development and governance stability. (GRR - Global Regional Review, n.d.)

It might provide a visual depiction of the region's physical variety to researchers, geologists, and policymakers by showing the layout of various genres of rocks, divides, minerals, and mined minerals throughout the whole region. These maps can help with land-use planning, resource management, and natural research by providing a better understanding of the earth's past and evolution of Balochistan County. In general, geological maps such as the one presented probably constitute useful instruments for improving our comprehension of Earth's processes and resources, so augmenting empirical data and improving well-informed decision-making across a range of fields (Source: Geology Survey. . ., n.d.)

The critical examination of Pakistan's policy-making in the context of resource revenue distribution in Balochistan, offering valuable insights for policymakers, researchers, and practitioners seeking to promote justifiable growth plus general supremacy in the region. (GRR - Global Regional Review, n.d.-b)

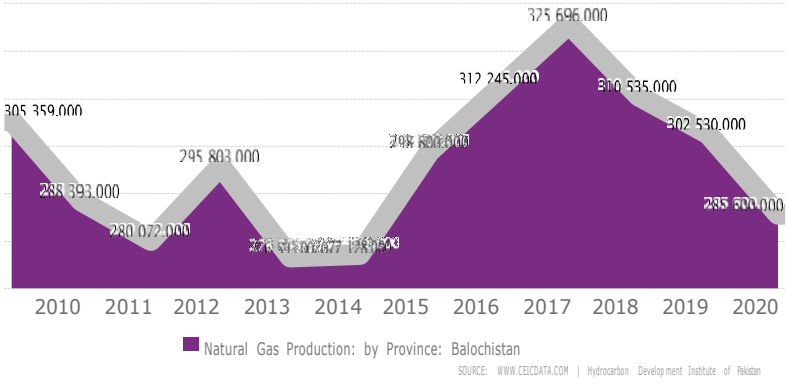
The unexplored opportunity for natural revenue in Balochistan, including of journey earnings and fuel. Additionally, the talk about projects and activities meant to investigate and utilize Balochistan's resources of hydrocarbons To maximize a province's drive future, this may involve talking about investor possibilities, policy choices, and businesses that are not sample firms but have a home base.

Further, the offer valuable perspectives on the impediments and barriers impeding the investigation and extraction of the hydrocarbons in Balochistan. The aim of this project is to increase public knowledge of Balochistan's unexplored oil and gas assets and to encourage action and assessment closer to their exploration, development, and sustainable use for the sake of both the geographic region and the economic growth the country as a whole. (Times & Times, 2022)

1.2.4 Gas

Pakistan's main fuel supply is Balochistan. Nature's riches abound in this area, including fossil fuels like gas and oil. Quetta, the capital of Balochistan, usually receives a smaller quantity of gas than it generates, though constituting a district that supplies the most of it. There is a great deal of unexplored capacity for petrol extraction, which may support the canton's buildings, employment market, and future growth. Due to its abundant fossil fuels deposits, Balochistan is a few of Pakistan's largest exports of fossil fuel.

Situated in Balochistan's Dera Bugti area, the Sui gas field is a significant mineral resource in the region. Even yet, Quetta has not entirely profited from it’s our environment, in spite being the world's biggest creator of petroleum gas. In 2010-11, while providing 17% of the country's gasoline inventory, Balochistan only contributed 1.5% of the country's overall use of gas. The unequal distribution of natural gas resources across the nation is shown by this discrepancy. This region accounted for 5.25 percent of Pakistan's fossil fuel use and 2.8% of the country's fossil fuels use of goods. Balochistan accounts for around 5% of the nation's overall population, therefore its percentage of power consumption is somewhat higher than the country as a whole, though its share of gas and petroleum product consumption is significantly lesser. Balochistan's low the density of people and large geographic dispersion have led to unequal growth all over the province.



It could cover a range of subjects such as policymaking, economics, social issues, or cultural developments. Alternatively, it could focus on economic issues, such as discussions on fiscal policies, trade agreements, or economic indicators. Furthermore, the social issues affecting Pakistani society, such as education, healthcare, gender equality, or human rights issues. It could also cover cultural events, artistic endeavors, or lifestyle trends shaping contemporary Pakistani society. (DAWN.COM, 2019b)

The Express Tribune highlights the severe lack of natural gas access in Balochistan, with 59% of the province's population living without this essential resource. The lack of infrastructure and political will to extend gas supply lines to remote and rural areas has left many residents reliant on more expensive and less efficient energy sources. Efforts to address this issue have been slow and insufficient, highlighting the need for more equitable resource distribution and development initiatives. (Tribune, 2014)

The rich mineral riches in Balochistan contrast sharply with the country's economy. The area is the biggest source of natural gas and has substantial material richness, but it is also the poorest and least developed. Insecure urban expansion has resulted from mass migration to Quetta due to rural inequities fuelled by unequal resource allocation. Ad hoc and ineffective budgeting has resulted from the absence of a cogent formation policy, dropping to meet the area's true requirements. Balochistan may more effectively utilize its resources and tackle persistent social and economic difficulties by implementing this strategy. (Javed, Faridi, & Malik, 2020)

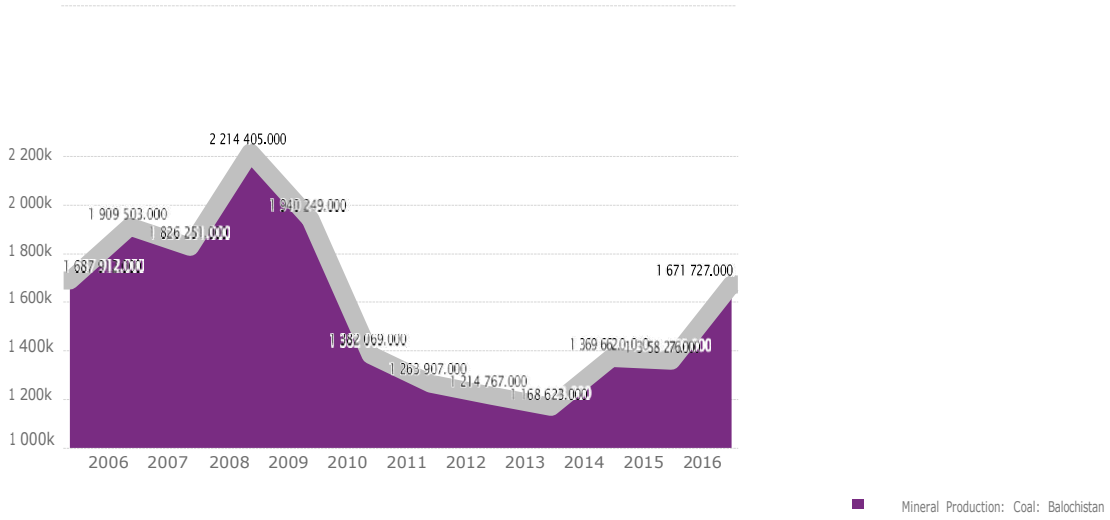
Balochistan still faces extreme inequalities and lack of advance in spite of its abundance of wealth of assets, including stones, crude oil, and along the seaboard. A large portion of the inhabitants of Balochistan resides in rural parts with little exposure to essential amenities like clean water, wellness, and instruction. Inequality in the area has also been exacerbated by the unequal allocation of resources, leading to migration to cities such as Quetta, which is experiencing fast and sporadic growth. In order to guarantee that the local populace benefits from exploiting assets, ecologically conscious measures are essential.(Singh,2020b)

1:3 Coal As a Natural Source of Balochistan Province

Fuel is an essential vital resource that is plentiful in Pakistan's Balochistan province energy related has long been significant to the area's sectors. Balochistan's energy and industry are heavily dependent

on coal. It serves as the primary energy source for numerous industries, incl power production, industrial processes, and home heating. Additionally, coal mining operations contribute financially to the federal and some other provincial governments through taxes, royalty fees, forms of revenue generation. Preserving coal reserves in Balochistan is essential for ensuring their sustainable utilization and long-term benefits. Efforts to preserve coal reserves involve both conservation measures and responsible mining practices. Conservation measures include the delineation of protected areas within coal fields to safeguard ecologically sensitive areas and biodiversity. Furthermore, responsible mining practices, such as land reclamation, environmental monitoring, and community engagement, are crucial for mitigating the environmental impact of coal mining activities and ensuring the well-being of local communities.The exact amount of coal used and preserved in Balochistan varies depending on factors such as demand, production capacity, and market dynamics. However, coal continues to play a significant role in the province's energy mix, with several coal-fired power plants in operation or under development. Additionally, coal mining activities continue to extract coal from various fields across the province to meet both domestic and industrial demand.

The provincial government has shown keen interest in developing Balochistan's coal resources for power generation. Despite its rich natural resources, Pakistan faces significant energy challenges. The country’s energy consumption remains low relative to its needs, and it relies heavily on imports to meet its energy demands. Electricity is crucial for Pakistan's economic development, but only 60% of the population currently has access to it. Renewable energy resources have historically played a minimal role in Pakistan's energy mix. (Mushtaq et al., 2012)



1:4 Wind

The province of Balochistan, power is turning into a valuable natural resource with vast capacity for the manufacturing of renewable strength and sustainable development. In Balochistan's pursuit of electricity security and sustainable improvement, wind energy is extraordinarily vital. Wind electricity is a easy, renewable electricity supply that has many advantages, which includes decreasing greenhouse gas emissions, stopping weather trade, and fostering power independence. Wind strength has the capacity to reinforce the province's economic system, create jobs, and electrify rural areas, especially in remoted and ignored regions. Wind resources are ample in Balochistan, in particular in its hilly and coastal areas. Balochistan's extensive-open areas provide lots of room for the construction of wind farms and the installation of wind mills. Regardless of having a full-size wind electricity capability, Balochistan is still within the early tiers of using this useful resource. In recent years, some of wind electricity projects have been started, most often in coastal areas like Gwadar and Pasni. With a view to provide electricity for neighborhood intake and grid integration, wind generators of various capacities are installation in the ones tasks. However, Balochistan's total mounted wind electricity ability stays distinctly low in relation to its capacity.

This passage highlights the pressing hassle of power poverty in Balochistan, underscoring the province's enduring warfare with persistent energy shortages and inadequate get right of entry to reliable strength sources. The Balochistan's herbal resource endowment, together with herbal fuel, coal, and renewable energy functionality, its strength infrastructure remains underdeveloped. This deficiency considerably influences the each day lives of residents, impeding get proper of entry to crucial services like education, healthcare, and smooth water, and hindering monetary improvement. Improving power get right of access to in Balochistan is deemed crucial not handiest for reinforcing citizens of lifestyles however furthermore for exciting financial development and fostering social stability within the path of the vicinity. (A. Khan, n.d.)

1:5 Solar Potential in Balochistan Province:

Pakistan experiences nine and a half of hours of sunshine in step with day on median. Following the implementation of regulations by means of the legislature geared toward promoting the technology of inexperienced energy, daylight hours became part of Pakistan's power mix in 2013. September 2015 noticed the implementation of internet metering restrictions for installations beneath 1 MW. Destiny

improvement in solar energy appears hopeful given the existing state of affairs of the power market, thinking about the growing value of fossil fuels. Pakistan has embraced solar electricity as part of its power mix given that 2013, whilst the authorities implemented laws to inspire renewable strength production. Currently, seven working solar tasks produce 530 MW of strength for the countrywide grid.

1:6 Water Resources in Balochistan Province

Balochistan's topography has an expansion of geological formations, in conjunction with sedimentary, igneous, and metamorphic rocks. Those geological formations monitor information about the area's geological data and evolution. Rivers like the Bolan and Dasht, which go together with the go with the flow throughout the province, offer water for irrigation and guide agriculture in effective areas. The river valleys' geological composition has an impact on Balochistan's everyday hydrology.

Balochistan's water distribution troubles necessitate an all-encompassing technique that includes coverage updates, upgrading infrastructure, involvement of society, and era improvements with a view to effectively cope with such hard conditions. The Balochistan authorities has released a number of packages to promote powerful water control and protection in partnership with regional, national, and global partners. For the area, aquifers is an essential source of water, but it is being overused, thus a thorough review is required. Over 72% of Balochistan rural residents get their water from lakes and wells that have been dug. By building controls and minor dams for refilling, the province has taken action to protect aquifer.

The Balochistan Water Sources Improvement Quarter Mission, which is being executed in the Zhob and Mula river basins, is one such assignment. Balochistan's flooding sources are an alternate abundant supply of water; only 40% of them are used, with the remaining 60% draining into the ocean. These documents serve as treasured resources for understanding the making plans, implementation, and assessment of ADB-funded projects, in addition to their contributions to the socio- financial development of the international locations and regions they goal. (Maisa, 2019)

1:7 Gold Mines in Balochistan Province

The Reko Diq mines inside the Chagai region have certainly one of the biggest metals reserves in the world. Due to this treasured useful resource's sizable cost, companies and consumers have fallen in for analysis. One of the province of Balochistan's most essential herbal resources, each financially and in phrases of amount, is its mined gold reserves. The Reko Diq inside the Chagai vicinity is typically located to have considerable quantities of steel plus tin. The Saindak Copper-Gold Mine and the Reko Diq Gold Mine are high-quality instances of gold extraction within the territory. One of Pakistan's larger gold reserves is the Reko Diq Gold Mine, that's located inside the Chagai area of Balochistan.

Saindak Copper-Gold Mine, also in the Chagai locality, is every other splendid gold discovered in Balochistan. Saindak has big gold reserves in addition to being the arena's biggest iron miner. The mine has been operating since the overdue 1990s and is run with the assistance of a set of Pakistani and chinese organizations. Even with its big gold stores, the Saindak his use for extracting gold proved to be confined in contrast to its output of aluminum. Other than the big-scale mining endeavors, Balochistan also has smaller-scale tribal mine operations, basically in areas like Chagai.

1:8 Copper as Natural Resource

Copper, as a ordinary asset, holds important significance in Balochistan territory, Pakistan, due to its copious saves and monetary potential. Balochistan is thought to have some of the global's biggest copper stores, making it a crucial player in the international copper show off. Balochistan territory is invested with wide copper assets, fundamentally focused within the Chagai locale. The locale is domestic to 3 major copper shops, counting the Saindak Copper-Gold Mine and the Reko Diq Copper- Gold increase. After the closure of mining operations, recuperation and rebuilding measures are actualized to recover aggravated arrive, reestablish environments, and relieve poor influences on the environment. This will consist of arrive healing, revegetation, and water administration activities to reestablish the arrive to its precise country. Furthermore, contributing in inquire about and advancement is essential for keeping copper property in Balochistan.

Balochistan's resource potential includes vast deposits of minerals such as copper and gold, alongside significant coal and natural gas reserves. Despite these riches, the region has not seen proportional development due to infrastructure deficits and security issues. The CPEC project is crucial

in addressing these gaps, promising enhancements in transport, energy, and industrial sectors. Projects under CPEC include constructing reservoirs and improving irrigation systems, essential for supporting agriculture and other industries. (Making Natural Resources a Blessing for Balochistan, n.d.)

Balochistan's mineral wealth extends beyond just copper and gold. The province additionally has huge deposits of chromite, which is critical for the metal industry, and barite, used in drilling fluids for oil and gasoline exploration. Iron ore is any other significant resource, with deposits found inside the Chagai District. The potential of these minerals remains in large part untapped because of the place's hard terrain, lack of infrastructure, and safety issues. With the aid of addressing these troubles, Balochistan ought to see sizable financial blessings from its mineral sources, contributing to broader national improvement. Enhancing mining practices and making an investment in contemporary technology are vital for maximizing the extraction and processing of these minerals. Moreover, developing a skilled workforce thru schooling and training programs might be important. Collaboration with worldwide mining companies could deliver inside the important know-how and capital. Sustainable practices need to additionally be emphasized to make certain that mining activities do not adversely impact the neighborhood surroundings and communities. (Rauf, 2023)

1:9 Chromite and Limestone:

One of the foremost elements used to make, chromite, is produced in full large quantities in Balochistan. The mining organization within the province has benefited from the discovery of chromite deposits, which were in maximum instances located in Muslim Bagh. Chromite, limestone, and marble are adequate assets in Balochistan. Pakistan, with first-rate implications for the use of the united states's country wide power capability. Chromite is one in all of the most critical manufacturers in the international, with Balochistan contributing greater than ninety% of Pakistan's usual production. Chromite is crucial for the producing of chrome steel and is in high call for in the worldwide market.

Limestone and marble also are essential belongings decided in Balochistan. Balochistan's limestone reserves play a crucial role in infrastructure development, providing raw materials for cement manufacturing, constructing materials, and agricultural packages. Balochistan is renowned for its adequate mineral assets, with the Chagai-Raskoh India connect and Magmatic Tail being particularly wealthy in metals. But, the Sulaiman and Kirthar basins moreover boast massive sedimentary mineral deposits.

To unlock Balochistan's mineral potential, strategic investments in infrastructure and security are essential. Developing efficient mining practices and adopting modern technology can enhance extraction and processing. Additionally, fostering partnerships with international mining companies can bring expertise and capital to the region. (Rauf, 2023b)

1:10 Petroleum:

Balochistan has full-size deposits of petroleum, a primary herbal aid that extensively meets Pakistan's strength desires. Located in Balochistan, the Sui gasoline pitch is one of the state's primary established blast assets, having been found inside the 1950s. Balochistan, Pakistan's largest province, holds substantial reserves of petroleum and natural gas, critical for the kingdom's electricity region. It contributes around 1.5% of Pakistan's herbal fuel intake and 2.8% of petroleum product consumption, with fuel coins predictable at 19 lots cubic ends, constituting sixty eight% of Pakistan's total. Despite generating 36-forty five% of Pakistan's natural fuel, Balochistan best consumes 17%. Balochistan's herbal gas industry is pivotal to Pakistan's electricity panorama, accounting for half of its overall strength consumption. (Malkani, 2011).

The China-Pakistan financial hall (CPEC) gives possibilities for exploiting these resources, inclusive of water management, mining, hydrocarbon exploration, and the established order of associated industries. Human useful resource improvement, improved fitness and training centers, and sustainable water management are essential. Local industries and production units, specifically small and medium-sized ones, require interest to ensure that development benefits the local populace and promotes financial increase. CPEC initiatives, including the development of the Gwadar port, energy technology flowers, and toll road creation, are underway, however integrating nearby industries into those initiatives is vital. (Making Natural Resources a Blessing for Balochistan, n.d.-c)

1:11 Agricultural Resources

Balochistan province in Pakistan is endowed with numerous agricultural resources which have the capability to pressure monetary increase and enhance meals security. The vicinity's agricultural landscape is characterized by way of using enormous rangelands appropriate for farm animals farming, as well as regions conducive to the cultivation of rewarding plant life like pistachios, almonds, walnuts, and apricots. Information, regardless of its agricultural potential, Balochistan faces demanding situations

that prevent the realization of its real agricultural capability. Balochistan's agricultural region performs a critical role in the province's financial system, imparting livelihoods for a massive portion of the populace. The province's low population density and extensive rangelands make it best for cattle farming, with goats, sheep, buffaloes, cattle, camels, and different cattle being prominent in the location. Balochistan's agricultural assets include fertile lands appropriate for growing a selection of vegetation, beginning from stop end result like dates and pomegranates to cereals like wheat and barley using agricultural property in Balochistan is vital for making sure meals protection, income generation, and monetary improvement. Know-how, the agricultural area in the province faces several challenges that impact its utilization. Water shortage is a trouble, with almost eighty-one% of farmers in Balochistan experiencing water shortages. Using unsustainable practices like tube wells similarly exacerbates the water scarcity trouble, principal to decreased water desk stages and agricultural productivity.

The province's agricultural sector performs a vital characteristic in its economic gadget, supplying livelihoods for a part of the populace and contributing to meal safety each regionally and nationally. The rural landscape of Balochistan is marked via the cultivation of diverse plants, orchards, and farm animals farming. The province is renowned for its fruit production, particularly apples, dates, grapes, and pomegranates. The fertile valleys of Quetta, Kalat, and Pishin are major fruit-generating areas. Apples, for example, are grown notably in those areas, with Balochistan accounting for about 85% of Pakistan's general apple production. The province's dates, mainly from the Makran region, are also noticeably prized for their and exported the world over.

Similarly to fruit cultivation, Balochistan is a giant producer of greens including onions, tomatoes, potatoes, and carrots. The province's various climatic conditions permit for the increase of the ramification of greens, which can be supplied to markets throughout Pakistan. Balochistan is also diagnosed for its manufacturing of pulses, collectively with lentils and chickpeas, which may be staple components in lots of Pakistani households. Livestock farming is every other vital detail of Balochistan's agricultural zone.

The livestock place in Balochistan supports a giant variety of economic sports. Meat and dairy products from the province are fed on domestically and supplied to markets in the course of Pakistan. The wool and hides produced in Balochistan are used within the material and leather industries, respectively, contributing to the charge-added sectors of the monetary system. Cattle farming moreover affords employment possibilities for a part of the rural populace, supporting livelihoods and reducing

poverty. The protection of agricultural assets in Balochistan involves addressing numerous challenges, collectively with water scarcity, weather change, and land degradation.

Water shortage is a critical problem in Balochistan, because the province receives limited rainfall and has few perennial rivers. The protection of water assets is crucial for maintaining agricultural sports. green water manage practices, inclusive of the use of drip irrigation, rainwater harvesting, and the development of small dams, are being promoted to decorate water use overall performance. (DAWN.COM, 2019)

1:11:1 Fruits and Vegetables

Balochistan, the greatest territory of Pakistan, gloats a one of a kind and various rural scene, that's particularly recognized through its productive generation of perfection and vegetables. In spite of its dry and semi-arid climate, the province's changed geology, enveloping ripe valleys and fields, makes a difference extraordinary rural exercises. Natural products and vegetables from Balochistan aren't most successful basic to the neighborhood nourishment arrange but moreover contribute impressively to the countrywide economy through both residential admissions and sends out.

Natural Product Fabricating in Balochistan

Balochistan is famed for its natural product generation, making it a impressive member in Pakistan's green segment. The province's climate, characterized through warm summers and cold winters, is perfect for creating a selection of natural products. The foremost brilliant natural products delivered in Balochistan comprise of apples, dates, grapes, pomegranates, peaches, apricots, and cherries.

Apples are conceivably the foremost recognized natural product of Balochistan, basically in locales like Quetta, Kalat, and Pishin. The area contributes around 85% of Pakistan's add up to apple fabricating, with an yearly yield surpassing 200,000 metric tons. Balochistani apples are celebrated for his or her fresh surface and sweetness, making them unmistakably favorite in both residential and worldwide markets. Grapes from Balochistan are transcendently developed in areas like Quetta, Pishin, and Mastung.

Onions are one of the greatest broadly developed vegetables in Balochistan, particularly inside the locale of Lasbela, Kalat, and Sibi. Potatoes developed in Balochistan, in specific interior the Pishin and Zhob locales, are recognized for their first-class and flavor. The fabricating of potatoes may be a vital portion of the province's rural yield, conferring a relentless provide to local markets and contributing to food security. Carrots, along with other root vegetables, too are full-size, with development on the complete interior the Kalat and Khuzdar locale. The upkeep of summit and vegetables in Balochistan involves tending to various challenges, in conjunction with water deficiency, climate exchange, and put up-harvest misfortunes. Feasible agrarian hones, green water control, and ventured forward carport and transportation framework are imperative to create sure the long-term practicality of the province's agrarian region.

Balochistan province in Pakistan is renowned for its wealthy agricultural diversity, specifically within the manufacturing of culmination and greens. The place is often referred to as the "fruit basket of the country," generating a huge kind of culmination which include grapes, cherries, almonds, apples, apricots, and pomegranates. Moreover, Balochistan cultivates an array of veggies, such as potatoes, onions, and more. Grapes are predominantly produced in districts like Quetta, Pishin, Kalat, Zhob, Loralai, and Mastung, at the same time as apples thrive in Kalat, Khuzdar, Quetta, Pishin, and different districts. The province's fruit production includes apples, apricots, cherries, peaches, plums, dates, pears, and bananas. however, in spite of the abundance of fruit manufacturing, Balochistan faces challenges in achieving foremost yields compared to the country wide and global averages.

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1:12 Coastal Areas of Balochistan Province:

The Makran Coastal extend runs nearby Balochistan's southern border, advertising the area a drawn out beachfront at the Middle Eastern Ocean. This coastal locale is checked with the help of its sheer cliffs, sandy shorelines, and different marine environment. Balochistan's coastline, which extends from Gaddani to Jiwani and comprises seventy three% of the nationwide coast and 720km in period, has colossal potential for budgetary enhancement. The coastal zones are moreover appropriate for tourism, with various guest spots comprehensive of Hannah Lake, Pir ghaib, Ormara shoreline, Kund malir ocean side, Jiwani's dusk, Gwadar Harbour, Ziarat juniper timberlands, and Nushki brilliant wild. The coastal area has the capability to produce 10 MW of tidal power, which seem radically contribute to the countrywide vitality capability.

Balochistan is a rotate region inside CPEC because it acts as a door in interfacing the arrive passage with the sea zone. Balochistan's geostrategic locale when it comes to the most worldwide exchange courses clarifies both its social and capability for thriving. Balochistan can be changed into one of the basic hallways of Asia by re-thinking and re-organizing the country's optics within the heading of Balochistan. (Usmani, 2021b).

Balochistan territory in Pakistan is residential to a various and deliberately vital coastal put that extends along the Arabian Sea. The coastal locales of Balochistan, counting ranges like Gwadar, Jiwani, and Gadani, protect colossal money related potential and play a imperative work within the province's improvement. The advancement of the Gwadar Harbour and the extension of sea foundation have advance more grounded the utilization of coastal sources for trade, shipping, and exchange.

The coastal regions of Balochistan, extending nearby the Middle Eastern Sea for approximately 770 kilometers, are most of the most extreme deliberately broad and apparently wealthy regions of Pakistan. This coastline, enveloping major places like Gwadar, Pasni, Ormara, and Jiwani, holds colossal capability for financial advancement, biological run, and vital armed force importance.

Gwadar is possibly the foremost recognized, recognized for its deep-water harbour, that's basic to the China-Pakistan monetary hallway (CPEC) activity. The Gwadar Harbour is conceived as a key center for alter and oceanic sports, giving coordinate get affirmation to to the center East, Africa, and profitable Asia. Pasni and Ormara are gigantic angling cities, contributing radically to the neighborhood and countrywide fish venture. Jiwani found near to the Iranian border, is a few other vital coastal town, deliberately sizeable since of its vicinity to the Strait of Hormuz, thru which a great measured parcel of the arena's oil supply passes. (Inp, 2024)

1:13 Gwadar Sea Port:

Gwadar Harbour, observed on the middle Jap Ocean in Balochistan territory of Pakistan, will be a big deep-sea port that plays a simple position inside the China–Pakistan economic corridor (CPEC). Possessed with the aid of the government-owned Gwadar Harbour professional and labored by using utilizing China outdoor locations Harbour ensuring organization (COPHC), the harbor is intentionally positioned near to key shipping publications and is collected to be a first-rate alternate purpose. It is anticipated to cope with a vast amount of cargo and ships in the destiny, with plans for significant extension with the aid of utilizing 2045. Gwadar Harbor, settled at the southwestern coast of Pakistan within the territory of Balochistan, stands as a confirmation to critical prescience and yearning basis enhancement. With its profound waters starting up to the middle japanese Ocean, Gwadar Harbour has advanced as a pressing oceanic door, conferring a multitude of employments and promising economic plausible consequences for the location and beyond.

The Jewel wiki page conceivably manages records at the records, change, and cutting-edge notoriety of Gwadar Harbour. It can component the framework activities related with the harbour, comprising of the advancement of terminals, berths, streets, and diverse centers to help sea alter and coordinations operations. Additionally, the net page can too talk about the association of differing partners, such as the Pakistani specialists, chinese dialect businesses, and around the world buyers, interior the change and control of Gwadar Harbour. The Jewel wiki web page may additionally analyze

the potential financial favors and requesting circumstances related with Gwadar Harbour. It is able to find the port's impact on territorial change, movement creation, exchange help, and remote subsidizing request in Pakistan's Balochistan territory and the more extensive region. Besides, the page might moreover examine natural issues, security concerns, and socio-financial implications related to the port's extension and operation. Pearl wiki page on Gwadar Harbour likely serves as a comprehensive asset for data the noteworthiness, change, and suggestions of one in all Pakistan's most extreme vital sea foundation errands. It gives important experiences into the port's position in territorial network, money related advancement, and geopolitical elements in South Asia and past. (Global Energy Monitor, 2022)

The Britannica site committed to Gwadar, a harbour city found on the southwestern coast of Pakistan, ignoring the Middle Eastern Ocean. Gwadar holds key significance since of its zone at the entryway of the Persian Inlet, making it a critical sea door for exchange and conveyance courses interfacing Asia, the center East, and Africa. Britannica page may furthermore offer nitty gritty truths almost the topography, records, and way of life of Gwadar. The Gwadar's part in territorial geopolitics and around the world family individuals, considering its vital put and the leisure activities of different partners, comprising of Pakistan, China, neighboring worldwide areas, and universal powers. Britannica page on Gwadar plausible serves as a comprehensive valuable asset for know-how the city's history, geology, advancement, and significance interior the setting of Pakistan's sea and financial scene. It offers valuable experiences into Gwadar's past, show, and future direction as a key member in adjacent exchange, network, and geopolitics. (The Editors of Encyclopaedia Britannica, 1998)

1:14 Mountain Ranges

Balochistan, the biggest area of Pakistan by9r2egion, may be a arrive of rough magnificence and differing scenes, characterized by its sweeping deserts, prolific valleys, and towering mountain ranges. These mountain ranges, with their grand crests and winding valleys, not as it were shape the province's topography but too play a crucial part in its biology, culture, and history. The Sulaiman Extend, extending over western Pakistan and eastern Afghanistan, involves a noteworthy parcel of Balochistan's scene. With crests rising to statures of over 3,000 meters, the Sulaiman Extend may be a impressive boundary, its rough territory stamped by profound gorges, soak cliffs, and winding waterways. Among its eminent crests is Takht-e-Sulaiman, or the Throne of Solomon, a location of chronicled and devout noteworthiness. The Sulaiman Extend is additionally domestic to different vegetation and fauna,

counting uncommon species adjusted to its cruel and dry climate.

To the northeast of Balochistan lies the Toba Kakar Run, a lesser-known however similarly captivating mountain run. Running parallel to the Sulaiman Extend, the Toba Kakar Extend is characterized by its fruitless and rough scene, with heights extending from 1,000 to 3,000 meters over ocean level.

The heart of Balochistan lies the Central Brahui Extend, a lesser-known mountain run that's domestic to differing scenes and biological systems. The Brahui individuals, after whom the run is named, have occupied these tough mountains for centuries, their culture and conventions molded by the cruel however charming scene of their country.

The Sulaiman Mountains, a southern expansion of the Hindu Kush run, shape the eastern edge of Balochistan, isolating it from the Indus Plain. This run amplifies from the Gomal Stream within the north to the Sibi Nari Stream within the south, with crests coming to up to 3,487 meters (11,440 feet). The Sulaiman Mountains are known for their soak, tough territory and are domestic to different species of natural life, counting the Sulaiman markhor and the Balochistan dark bear.

Balochistan, Pakistan, is domestic to a numerous variety of mountains, which appreciably make contributions to its precise geographical landscape. The province features extremely good peaks such as Koh-e-Taftan, a volcanic mountain, and the Sulaiman range, which includes Takht-e-Sulaiman, a top with each cultural and spiritual significance. Those mountains now not most effective upload to the natural beauty of the vicinity but additionally impact the weather and ecology. (Balochistan Mountains | Peakery, n.d.)

Balochistan's topography is characterised by way of a numerous and rugged panorama, consisting of significant deserts, mountain tiers, and coastal areas. Kirthar mountain stages, which run north to south, growing dramatic escarpments and valleys. The coastal belt alongside the Arabian Sea consists of enormous ports like Gwadar,which can be vital for trade and strategic purposes. This varied topography affects the climate, natural assets, and human settlements in Balochistan, shaping its economic and social dynamics. The province's geological richness, such as mineral deposits and fossil fuels, is closely tied to its diverse terrain. Regardless of those herbal endowments, the difficult landscape poses barriers for infrastructure improvement and accessibility. (BALOCHISTAN TOPOGRAPHY -, 2022)

1:14:1 Plateaus And Valleys

The province has many mountain degrees, together with the Makran, Sulaiman, and Toba Kakar levels. In addition to increasing the topographical range of the location, these mountains have an impact on the climate and hydrology. Located in the western a part of Balochistan, the Chagai Hills are well known for their arid and rugged terrain. For miners, the hills are a popular region because of their richness in mineral assets. The region is widely recognized for owning an abundance of renewable electricity sources, particularly within the fields of wind, sun, and thermal power. The location additionally has a great deal of possibility for producing sun strength, specially in the magmatic origins of the Chagai Volcanic Arc, the hydro wells of the Pishin Reservoir, and the porous cones and hydro springs of the Makran seaside coast. (Azam, 2023e)

1.15 Desert Area of Balochistan Province

Balochistan is home to many significant barren region regions, along with the Kharan and Thar deserts. Although those arid landscapes provide demanding situations for agriculture, they are vital for mineral resources and the improvement of renewable energy initiatives, particularly sun and wind energy. Balochistan is characterized via a low percentage suburban citizenry, low population density, low energy use, and a negative or nonexistent constructed surroundings.

The Balochistan Agriculture policy Framework centers on the critical measures required to enhance nutrition, crop alternate, and future sales gains with a purpose to lower inequality. Balochistan must reflect on consideration on emphasizing the production of premium, drought-proof, low-delta, and incredibly ideal merchandise.

The Kharan wilderness is characterized via a sandy and mountainous terrain, with a dry, arid weather that is ordinary of the vicinity. The desert is located inside the center of a large, empty basin and is understood for its rugged splendor and sparse flowers. In spite of its harsh environment, the Kharan desert is domestic to a spread of flora and fauna, such as the Balochistan gazelle and the Balochistan urial, a species of untamed sheep. In addition to the Kharan wilderness, Balochistan is likewise home to numerous different desolate tract areas, together with the Chagai Hills inside the northwestern part of the Province. The Chagai Hills are recognized for their low-lying plateaus and hills, as well as their mineral resources, consisting of copper and gold. The Chagai desert, which borders the Chagai Hills, is a place

of proper desert together with inland drainage and hamuns (playas).

Balochistan hosts numerous distinguished wilderness areas which are fundamental to its panorama. The Kharan wilderness, acknowledged for its significant sandy plains and extreme temperatures, stands out as a massive function. This wilderness has historic significance, being the web page of Pakistan's nuclear checks. (Abdul Ghafar: 092- 321-3509799, n.d.)

The Kharan wilderness, located in Balochistan, Pakistan, is thought for its massive, barren landscapes and extreme climatic situations. It’s a far flung and arid area with sparse plant life, characterized by using sandy dunes and rocky terrain. The barren region is massive for its specific geological functions and has been a domain for Pakistan's nuclear assessments. No matter its harsh surroundings, the Kharan barren region holds ability for mineral exploration and has been a factor of interest for researchers studying wilderness ecosystems and geological formations. The place's herbal Splendor and stark, untouched landscapes additionally offer a completely unique attraction for adventurous vacationers. (Blog, 2023)

1.16 Forests of Balochistan Province:

Balochistan, the most important vicinity of Pakistan, is domestic to three noteworthy go away zones that contribute to its one among a type scene and way of life. The foremost placing leave in Balochistan is the Kharan leave, which covers an area of approximately 20,000 square kilometers inside the northeastern portion of the province. The Kharan Forsake is characterized via a sandy and mountainous territory, with a dry, parched weather it's normal of the locale. The forsake is arranged within the center of a large, purge bowl and is understood for its tough elegance and inadequate flora. The Chagai Forsake, which borders the Chagai Slopes, can be a locale of true go away comprising of inland waste and hamuns. The go away regions of Balochistan have played a vital part in the province's records and subculture. For hundreds of years, the locale has been a middle for alternate and trade, with caravans traveling along the antiquated Silk Street that passed via the area. The go away regions have additionally been the location of critical actual activities, including the Chagai-II atomic test, which become carried out by way of Pakistan in the Kharan Forsake in 1998.

In spite of those endeavors, the forsake tiers of Balochistan proceed to confront large challenges.

Overgrazing by way of animals has driven to the corruption of flora in severa zones, while deforestation has faded the habitat of severa species of herbal life. Mining sports, in particular within the Chagai Hills, have too had a bad effect on the environment. Balochistan's fruitless locale zones are a few of the most extreme setting scenes in Pakistan. The Makran wild, set nearby the coastal locales, offers a mix of sandy and rough landscapes with a one of a kind environment. The common splendor of these deserts, blended with their biological and geographical centrality, underscores the wealthy and differing natural embroidered artwork of Balochistan. (Abdul Ghafar: 092-321-3509799, n.d.-b)

The Kharan desert in Balochistan is renowned for its expansive sand dunes and rugged terrain, creating a dramatic and difficult surroundings. This wasteland is characterized through its excessive temperatures, which can soar in the course of the day and plummet at night time, making it a harsh yet charming panorama. In spite of its harsh conditions, the Kharan desert supports numerous sorts of life tailored to the arid weather. This consists of resilient plants and fauna, contributing to the desolate tract's ecological range. The moving dunes and rocky outcrops create a visually beautiful and ever-changing landscape that captivates visitors. The barren region's remote region in addition enhances its attraction to those looking for solitude and a deep connection with nature. (Blog,2023b)

1.17 Cave System and Rock Formation

Balochistan's likely for renewable dynamism, mostly gale and lunar oomph, is highlighted the factor. It proposes the development of a grid- tied network to harness renewable electricity resources and shows reviving the TAPI herbal gasoline pipeline challenge to set up a viable strength corridor. This element underscores the importance of shaping narratives that promote inclusiveness, counter militancy, and garner local aid for the CPEC task. It shows imposing the country wide motion Plan to counter militancy and incorporate propaganda in opposition to CPEC, even as also concerning local stakeholders in coverage-making and dissemination of information. Average, the green Balochistan Initiative seeks to deal with governance, security, monetary, and strength challenges in Balochistan at the same time as leveraging its strategic significance within CPEC and the blue economic system of Pakistan. (Usmani, 2021)

The rock formations and water assets of Balochistan piece a decisive protagonist inside the state electricity capability of Pakistan. Pakistan's countrywide producing manufacturing is greatly prompted

by the solution gadgets and rocks found within the Balochistan area. The mineral reserves, consisting of coal and geothermal assets, can contribute to the use of electricity protection, at the same time as the water assets are important for agricultural manufacturing and farm profits. The Balochistan Water assets improvement venture is an instance of how the province's water sources may be advanced and managed sustainably to enhance the livelihoods of rural households and contribute to the dominion's pecuniary progress. (Sibtain et al.,2021)

CHAPTER II

Exploration of the Natural Resources of Balochistan

2.1 Natural Resources of Balochistan

Pakistan's Baloch Province's goods are essential to the nation's ability to use all that they have to offer, especially when it comes to energy companies. These are the main ideas derived from the mentioned publications. Oil, natural gas, coal, and renewable energy sources like sunlight and wind power are among the abundance of energy options found in Balochistan. The significance of them has grown for Pakistan's energy security, with Balochistani oil and gas playing a major role in shaping its defense strategy. Balochistan possesses substantial potential for producing green electricity, especially in the areas of solar and wind power. The location is perfect for green energy initiatives because of its large region and minimal density of inhabitants. These schemes may greatly improve Pakistan's energy mix and lessen the country's dependency on petroleum and diesel. Balochistan suffers energy access issues, with power available to just 36% of the province's population.

Balochistan is Pakistan's biggest province, with $1,106 per capita income and a human development index of 0.473. The agricultural industry contributes to one-third of the province's GDP, yet hunger is widespread. Balochistan has few water resources, and water resource management is inadequate. It has a limited number of permanent rivers, and its water resources include an abundance of liquid (57%), marine from the Indus Bowl (39%), and groundwater (4%). Balochistan's low and irregular precipitation combined with its natural aridity make it very sensitive to the effects of climate

change. By 2021, power would only be available in 36% of the province of Balochistan, and 75% of that electricity would be utilized for agricultural tube wells. Limited literacy and limited social mobility disadvantage women, making it difficult for them to acquire agricultural loans and other necessary inputs as well as efficient agriculture extension services. By using the wet season waters produced by heavy, highly episodic rainfall, the planned project will construct a storage reservoir that may be used for extended periods, especially during dry seasons.

Through the use of agricultural sustainability techniques, buffer height confirmation, the incorporation of dam safety measures under future predicted flood hazards, and the inclusion of water-energy linkage aspects, the effort will promote and assure adaptation to global warming. The task at hand would adopt an active process for strategic growth in areas alongside various community efforts, and it will reinforce the capacity of the governing body and other important stakeholders, including beneficiary communities, to manage water assets.

Pakistan's vitality consumption and desire are rising due to growing numbers of people and fast development. A lot of urban dwellers still reside in a small number of big cities, which puts strain on city facilities and goods and leads to chaotic situations. Although there is not much of the green energy industry in Pakistan, both the citizenry and private industries are investigating the use of renewable energy sources in collaboration with other countries. The fossil fuel condition in Pakistan, the state of renewable energy in Pakistan and Balochistan, cases, and the difficulties the region's sustainable fossil fuel sector faces are all covered in this essay.

2.2 Renewable Energy in Pakistan

Pakistan was categorized by the National Renewable Energy Laboratory (NREL) of the United States according to its prospective on sunshine and hydroelectricity. Numerous fuel initiatives have been launched to produce power from green sources in recent years, including wind power projects, solar power projects, and biogas plants. Balochistan has a low population density and abundant renewable energy resources. Photovoltaic technology can readily satisfy the needs of homes with extremely low power requirements and is especially well-suited for remote places with tiny power requirements. With a typical cruel daily sun pollution of 5.9–6.2 kWh/m2/day annually, Balochistan has the greatest solar radiation in Pakistan. The province has inked deals to build 50 MW

and 300 MW solar power facilities and has the globe's greatest levels of sunshine production.

Balochistan is endowed with an abundant gusting wind, and the Lasbela District's coastline regions are better suited for producing solar energy. For the wind power turbine to operate at its minimal performance, an average breeze velocity needs to be no lower than 3 m/s. Balochistan experiences frequent load shedding, low pressure of gasoline, power outages, or an absence of pleasure with oil pricing. A large number of Quetta locals utilize photovoltaic panels for powering their homes under service tripping.

IDSP's Quetta Faculty of Civic Development (UCD)

The Institute for Development Studies and Practices (IDSP) began offering educational seminars in 1998 to enhance the civic and personal growth talents of underprivileged, disregarded alienated youth and individuals, thereby enabling them to advocate for their beliefs.

To carry on empowering individuals by using training, IDSP decided to establish a unique school facility in Quetta. The UCD location was designed by a well-known Pakistani developer and uses power from sustainable options. Enormous south-facing panes and flooring made of brown stones or masonry are key components of the solar-friendly architecture, which businesses solar heat during the day and release in the evening. At UCD, sunshine is applied to illuminate the interior as well as the exterior and to heat water during Quetta's chilly winters. Using the managerial and financial assistance of USAID, Azat Foundation Quetta, and the National Economic Outreach Programming built reservoirs for water and fitted 400 solar water pumps that are in 13 towns in DistrictBoard Daak, Anambostan in Tehsil Nushki, Balochistan. Several tube wells in Balochistan are not operating due to malfunctioning equipment or insufficient funds to cover fuel, repairs, and restoration costs.

2.3 Projects and Initiatives Supporting Renewable Energy in Balochistan

As part of the China-Pakistan Economic Corridor (CPEC), Balochistan has started large-scale PV initiatives to put over 14 GW of solar power into operation in the following 5- 7 years. These projects focused on the use of solar energy, notably photovoltaic (PV) utility-scale

facilities, wind farms, concentrated solar power (CSP) plants, and distributed PV systems. Engro Energy is involved in the construction of solar farms in Balochistan, including projects like the Solar 50 Construction in Kuchlak and Lasbela, as well as pre-construction projects in Panjgoor and Pishin. Expanding the use of alternative sources—particularly solar control—is essential to improving lighting in remote parts that are cut off from the national grid. When used alongside sunshine, local tiny power plants can offer rural populations a dependable energy supply at a less expensive rate than regular system growth. The Balochistan administration has put out several proposals aimed at increasing the nation's solar energy contribution, in keeping with larger endeavors to advance renewable energy sources throughout Pakistan.

Balochistan holds significant reserves of natural gas, making it a crucial contributor to Pakistan's energy sector. Utilizing these reserves effectively can reduce Pakistan's dependence on imported energy sources, improve energy security, and drive economic growth through industries such as petrochemicals, power generation, and manufacturing. Balochistan is abundant in minerals and metals such as coal, copper, gold, chromite, and zinc. Developing these resources through sustainable mining practices can boost Pakistan's industrial base, create employment opportunities, and generate revenue

through exports.

Balochistan's vast land area and abundant sunlight make it suitable for renewable energy projects, particularly solar and wind energy. By utilizing these natural resources, Pakistan's energy supply can be more diverse, its carbon footprint can be decreased, and energy scarcity in rural regions may be addressed. Green power initiatives may also boost the local market by generating jobs and funding buildings. Balochistan boasts diverse landscapes, including mountains, deserts, coastal areas, and historical sites. Quetta Electric Supply Company

In 2023, the Pakistani government gave rural areas direct control over power supply businesses. Frequent downtime was prevalent, and QESCO, the only shipping firm servicing Balochistan, had one of the lowest recovery rates at 39.8%. As of 2020, QESCO has barely 0.3 MW of installed net-metered producing ability; only eight licenses were verb second-person singular simple past indicative of be first/second/third-person plural simple past indicative of be first/second/third-person singular/plural simple present/past subjunctive of be first/third-person singular simple past indicative of be. noun Alternative form of wer (“man; wergeld”) The collective name for any kind of person that changes into

another form under certain conditions, including the werewolf. Report Word granted since 2016. There are several obstacles to net measurement in Pakistan. It is recommended by scholars that Pakistan establish laws to support autonomous combined systems and small-scale grids. This would boost the pace of power and attract private sector investment in Pakistan's traditionally neglected areas. Due to Balochistan's extreme ruralness, tiny power plants will be used to distribute electricity from renewable energy projects to neighboring villages and inhabitants. Small grids are considered as advantageous given their reduced social effect. Relatively a few investors are engaged in fresh construction in Balochistan. China Power Hub Generation Company and ANC Ventures held the canceled Gadani Energy Center venture. Large electrical firms in Pakistan are the owners of coal and gas installations. The only green energy initiatives that Balochistan has in the works are solar ones. However, several businesses, including China Three Gorges Corporation, China Sunec Energy, PowerChina, and Burj Capital, hold many initiatives. Through the mobilization of $2.6 billion in outside ventures, the United States Agency for International Development (USAID) has been able to recover $429 million in income in the supply chain and add over 3,900 MW to the net.

Renewable Energy Investment Entities (RE-IEs) are permitted to place funds in sunshine-creating efforts up to 5 MW under Type III. Although Category I is offered for works up to 50 MW, Category II is allowed for works up to 1 MW. The Pakistan Program for Affordable and Clean Energy (PACE), which seeks to strengthen the utility sector's fiscal viability and aid the nation's shift to green electricity, has received $400 million in approval from the lender. Several renewable energy development businesses asked NEPRA to create a strict regulation to facilitate the execution of projects at the beginning of 2023.

CHAPTER III

CHALLENGES And PROSPECTS

3.1 Challenges

The natural resources of Balochistan province in Pakistan, despite being abundant and diverse, have posed significant challenges for the local population, leading to socio-economic disparities and environmental concerns. The province is rich in resources like gold, copper, black pearl, oil, valuable stones, coal, chromite, and natural gas, with over US$1 trillion worth of resources discovered. However, the exploitation of these resources has not translated into significant benefits for the people of Balochistan. The province faces a paradox where it is resource-rich but its inhabitants live in poverty, lacking access to basic amenities like quality education, healthcare, and clean drinking water.

One of the major challenges in Balochistan's natural resources sector is the unequal distribution of benefits. Despite the significant profits generated from mining activities, a large portion of these profits is sent back to China, with only a small percentage allocated to the local population and the provincial government. This disparity has led to a situation where the people of Balochistan do not see substantial improvements in their quality of life, with many still living in poverty and lacking basic infrastructure. Balochistan is prone to earthquakes since it is located in a seismically active area. Several earthquakes have impacted the province's geological landscape. Herbal dangers in Balochistan province, which include floods, droughts, earthquakes, and cyclones, pose substantial challenges and play a crucial role in Pakistan's countrywide power capability. The region is prone to diverse herbal screw-ups, with floods affecting Punjab and Sindh, mount gushes impacting the craggy extents of North Western restriction domain and Balochistan, and cyclones from time to time pummeling the coastal tiers of Sindh plus Balochistan. Addressing herbal dangers in Balochistan is essential for Pakistan's national power capacity as those disasters can disrupt strength infrastructure, affect strength technology, and result in monetary losses. By correctly dealing with and mitigating natural dangers, the area can enhance

its resilience, guard crucial energy infrastructure and make certain stable energy delivery for us, additionally, investing in disaster control and preparedness measures can assist reduce the effect of herbal disasters on the country-wide economic system and make contributions to sustainable improvement inside the area. (Sibtain et al., 2021b)

The human development index in Balochistan is the lowest in Pakistan, with troubles like low literacy fees, excessive little one mortality fees, and inadequate healthcare facilities plaguing the place. The province's natural assets have been a source of sales for the kingdom, but the blessings have now not been successfully reinvested within the well-being of the Baloch human beings. Mining activities, mainly in regions like the Sui place of Dera Bugti, have caused environmental degradation and pollution. The extraction of natural gas and other minerals has not been followed via adequate environmental protection measures, leading to problems like water infection and habitat destruction.

These demanding situations and the geopolitical dynamics surrounding Balochistan's natural assets add another layer of complexity. The involvement of outside actors like China in resource extraction tasks, as a part of projects like the Belt and Avenue Initiative and the China-Pakistan monetary corridor, has raised issues about the exploitation of sources at the expense of nearby groups. The profits generated from these tasks regularly no longer trickle down to the humans of Balochistan, exacerbating existing socio-monetary disparities and fueling discontent among most of the population. The natural assets of Balochistan, Pakistan, are ample and diverse, encompassing mineral reserves predicted at USD 1 trillion, which includes coal, sulfur, chromite, iron ore, barite, marble, quartzite, limestone, copper, gold, and giant oil and gas reserves. Notwithstanding this wealth, Balochistan faces a myriad of challenges in harnessing and handling its natural assets successfully.

The mining sector in Balochistan remains underdeveloped due to elements like insufficient investment, lack of infrastructure, and limited exploration activities. The extraction and processing of minerals may have detrimental environmental results if now not controlled sustainably, posing a task of balancing economic improvement with environmental conservation problems related to governance, transparency, and equitable useful resource distribution, highlighting the want for higher institutional frameworks and governance practices in coping with herbal sources. The local population in Balochistan often feels marginalized and discontented due to perceived inequalities in useful resource distribution and shortage of benefits from useful resource extraction activities.

Addressing these demanding situations is vital for Balochistan to release its natural resource capacity sustainably, sell financial growth, and ensure the well-being of its people. By overcoming these barriers through strategic planning, investment, stepped-forward governance, and addressing social and environmental concerns, Balochistan can pave the manner for a extra wealthy and strong destiny. Natural useful resource wealth, even as promising, may be both beneficial and burdensome. Right control and equitable distribution can lead to nearby wealth and improvement, decreasing conflicts. Balochistan, Pakistan's largest province, is wealthy in minerals, expected to be worth $1 trillion, but remains underdeveloped due to loss of investment and infrastructure. The province boasts abundant sources like coal, sulfur, chromite, iron ore, and tremendous oil reserves. Top-notch mines like Saindak and Reko Diq preserve considerable copper and gold reserves. Despite those riches, bad infrastructure, and investment avert full utilization of those assets.

Balochistan's iron ore reserves, estimated at 2 hundred million heaps, have the potential to expand a robust iron and metal industry, boosting job advent and the local economic system. (Mineral Potential of Balochistan, n.d.)

3.1.1 Sustainability Challenges:

The fishing area has sustainability problems irrespective of its economic significance. Climate alternate, habitat degradation, and overfishing all affect the delicate marine environment. The prolonged period viability of this useful aid depends on the usage of sustainable fishing strategies.

The dry season circumstance in Balochistan embodies the impractical utilization of assets, prompting settlements with a lack of common sense, tainted water, and wasteful waste administration. Fast urbanization and populace development worsen these issues. Reasonable improvement requires harmony between financial development and natural insurance, guaranteeing that monetary exercises don't come at the expense of ecological well-being. Carrying out state-of-the-art designing practices and fostering a conditioned climate that advances general well-being, manageable occupations, and personal satisfaction ought to be the objectives of financial organizers. (Webdesk, 2018)

3.1.2 National Security and Counter Terrorism Efforts

Balochistan's soundness and security are indispensable for Pakistan's public safety. Guaranteeing harmony in the territory is crucial for keeping up with inward steadiness and staying away from dangers to the country's public safety. The successful administration of safety issues, especially those introduced by dissenter associations, is crucial for Pakistan's solidarity and strength. Balochistan's association with counterterrorism endeavors is characteristic of its essential importance. The region's tremendous and rough scene presents difficulties, yet compelling organization and checking are expected to keep any dangers from appearing. (Counter Terrorist Force (CTF) | Balochistan Police, n.d.)

3.1.3 Environment and Social Implications

The economy of Balochistan is dependent on the extraction of its regular assets; in any case, progress and ecological preservation are unrelated. Diminishing the unfavorable impacts on biological systems, neighborhood networks, and biodiversity requires the utilization of reasonable mining rehearses and versatile assets by the executives. Arriving at this harmony is basic to the drawn-out suitability of Balochistan's assets and their ability to add to Pakistan's public strength. Guaranteeing that the advantages of asset extraction are disseminated uniformly among neighborhood networks is pivotal to a comprehensive turn of events. Balochistan's regular assets ought to go about as an impetus to further develop its occupants' satisfaction through training, medical services, and foundation improvement. Comprehensive development works on friendly solidness, which builds the general public power potential. Assessing the hydropower capability of Pakistan includes breaking down different factors like geology, hydrology, geography, and environment. Pakistan is blessed with a few streams starting from the Himalayas and Karakoram ranges, making it rich in hydropower assets.

Pakistan's landscape has changed, with fields and deserts in the south and mountains in the icy. The official trenches are the Sutlej, Jhelum, Chenab, Ravi, and Indus, which are alluded to as the Indus Stream Framework. High mountain reaches, icy masses, and soak valleys characterize the northern locales of Pakistan, particularly Gilgit-Baltistan and Khyber Pakhtunkhwa (KPK), which have

significant hydropower potential. The progression of water in Pakistan's streams is generally dependent on rainstorm precipitation and the nostalgia of hail and ice sheets in the Himalayan and Karakoram mountains.

Balochistan faces difficulties connected with air and water contamination, essentially because of modern exercises, mining activities, and insufficient waste administration rehearses. (Anjum et al., 2022)

3.1.4 Security Situation

The security circumstance in Balochistan, Pakistan's biggest and most unpredictable territory, has been a main pressing issue for the public authority and the worldwide local area. The territory has been tormented by a perplexing snare of entertainers and interests, including nearby Baloch patriot gatherings, aggressor associations connected to strict radicalism, and outer entertainers like India and Iran. The Baloch patriot development, looking for more prominent independence and command over the region's assets, has participated in a well-established struggle with the Pakistani state.

One of the significant difficulties confronting the security powers in Balochistan is the issue of defilement inside the positions of the Outskirts Corps (FC), the lead security organization in the area. The FC has been reliably blamed for its contribution to pirating and defilement, which has exacerbated the security emergency. In a remarkable move, the military recognized the issue by excusing six senior officials from the administration for debasement in 2016. The security circumstance in Balochistan has sweeping ramifications for the solidness of Pakistan and adjoining nations, relations with adjoining nations, and monetary desires, particularly the CPEC project. The region has encountered a progression of safety episodes as of late, including blasts close to government structures and conflicts between security powers and assailants. To address the security circumstance, the public authority has chosen to amend the security plan for the territory following the killing of nine individuals in the anxious locale. The main priest of Balochistan has underlined the requirement for a typical game plan including legislators, common military, organization, legal executive, and media to battle the conflict against illegal intimidation.

Understanding every knowledge, doors influence, significantly from India and Iran, further complicate topics, with accusations of guide for Baloch separatists. Efforts to cope with

Balochistan's security woes require a multifaceted approach, encompassing economic improvement, political communication, and human rights responsibility. Leveraging the province's considerable natural resources for nearby benefit and attractive in great political discussions with Baloch leaders are essential steps. Furthermore, addressing allegations of human rights abuses and making sure responsibility within the safety equipment is vital. (Dastgir, 2024)

3.1.5 Non-availability of The Communication Network

The communique networks in Balochistan province have confronted challenges, in particular in phrases of net regulations and disruptions, impacting the glide of facts and connectivity within the area. Recent incidents have highlighted the constraints and disruptions in verbal exchange networks, affecting numerous elements of everyday lifestyles and posing good-sized traumatic situations for residents and businesses in the province. The guidelines on net offerings in Balochistan, specifically earlier in elections, have been a cause for trouble. The government has carried out brief restrictions on net access in "sensitive" polling booths all through the province to mitigate dangers of functionality exploitation using terrorists for communique features. (Committee to Protect Journalists, 2024)

The current incidents in numerous areas of Balochistan Province, together with small-scale assaults near election activities, have brought about the government to keep a more suitable protection posture in the area at a minimum until late April. Those incidents encompass a fatal rocket attack on a Pakistan Humans' Celebration (PPP) office in Kohlu District on April 23, as well as rocket assaults and a landmine explosion on April 24, which brought about a transient suspension of vote casting. Moreover, a protest was held using activists in Kohlu on April 24, alleging irregularities inside the electoral technique.

In response to those safety threats, the authorities have endured habitual security operations in numerous areas, consisting of the Pishin District, where militants had been killed and suspects detained between April 22 and 23. government are probable to increase their security presence in affected regions and surrounding areas as wanted, potentially implementing more advantageous security regulations together with vehicular exams. Moreover, there's an opportunity for further small-scale security incidents, such as explosions. Moreover, related protests may additionally arise in the coming days, with capacity accumulating sites together with polling stations, government homes, public squares, and thoroughfares.

Clashes between activists and police cannot be ruled out in such scenarios. As a result, localized

disruptions to transportation and commercial enterprise sports are probably to arise inside the affected areas. (Crisis, 2024)

3.1.6 Poor Infrastructure

The terrible foundation in Balochistan territory represents a huge endeavor to the spot, affecting different elements of everyday ways of life, monetary improvement, and boundless prosperity of the populace. The region's immature foundation, deficient offices, and absence of present-day transportation structures have obstructed improvement and added to a spread of difficulties influencing the occupants of Balochistan.

The horrible circumstances in the foundation increment past transportation to envelop issues related to power supply and water shortage. Individuals of Balochistan face extended long stretches of burden loss and strength deficiencies, influencing their consistent lives and monetary games exercises. Water shortage is one or two squeezing bothers, influencing farming, dairy cattle, and the generally native monetary machine of the locale. the absence of polishing off the water in certain urban areas close to the seaside double carriageway comparably fuels the water fiasco, featuring the requirement for ventured forward water convey framework in Balochistan. Moreover, Balochistan is wrestling with a serious lack of educators, with half of its elementary schools having just a single instructor. (Tribune, 2023)

3.1.7 Lack of Expertise

The absence of understanding in the Balochistan region gives a far-reaching project that hampers the spot's improvement and progress all through various areas. The region's immature framework, deficient passage to top-notch tutoring, and bound business prospects have added to a shortage of talented efforts and understanding in Balochistan. The lack of skill is clear in key locales alongside schooling, medical care, and the labor force, affecting the general socio-monetary scene of the territory.

With these difficulties, the public authority, as a team with associations like UNICEF and the European Association, has presented drives like the Balochistan Essential Schooling Project (BBEP) to further develop the school system. The BBEP plans to upgrade the nature of training, increment local area associations through Parent Educator School The executive's Councils, and advance feminine cleanliness on the board in schools. (Kethran, 2024)

3.1.8 Sardari System

The sardari system in Balochistan province poses a good-sized project to the powerful control and usage of the location's ample herbal assets. This feudal gadget, which has its roots in the British colonial era, has perpetuated a power form that concentrates wealth and effect inside the hands of a few tribal chiefs, called sardars. The sardari device has hindered the equitable distribution of assets, the improvement of infrastructure, and the empowerment of neighborhood agencies, in the long run impeding the province's functionality to harness its herbal wealth for the gain of its people. Balochistan is endowed with a wealth of natural resources, which consist of minerals, oil, gas, and fertile lands but the sardari system has allowed the sardars to manipulate these sources, regularly at the value of the close by populace. The sardars have used their impact to cozy favorable contracts with resource extraction corporations while neglecting the development of their private communities. This has delivered about a situation wherein the humans of Balochistan, in particular those dwelling in rural areas, stay impoverished and shortage get right of access to to primary offerings, despite the province's herbal riches.

The point out of the Makran division in Balochistan, regardless of not having a sardari machine, dealing with similar problems as other parts of the province, highlights a crucial factor approximately the scapegoating of sardars and the sardari gadget. The sardari gadget, traditionally mounted via the British Raj to manipulate tribes and prevent rebellion, has long been criticized for perpetuating inequalities and stifling development. But, even in areas in which this machine doesn't exist, troubles persist, indicating that blaming sardars on my own is an oversimplification of the problems at hand. (DAWN.COM, 2018)

3.1.9 Heavy Investment Cost

Balochistan's development projects, especially in Gwadar and below the China-Pakistan Financial Hallway (CPEC), consist of substantial speculation prices to saddle the district's economic capability, set out work open doorways, and pressure financial improvement.

The animal's place in Balochistan additionally faces problems in drawing in ventures. The place has the capacity for layer cultivating, goat/sheep cultivating, steers stuffing homesteads, and dairy introduction.

The fisheries area in Balochistan gives possibilities for superior techniques in fish dealing and renovation to meet worldwide demand and beautify exports. Shrimp farming, mainly, holds promise because of favorable coastal situations and the presence of numerous marine shrimp species. Cattle-related industries together with layer farming, goat/sheep farming, and farm animal fattening offer avenues for funding, with export capacity to neighboring worldwide places. (Invest Opportunities, Competitive Advantage of Balochistan – the Official Web Gateway to Balochistan, n.d.)

3.1.10 Tectonic Activity

Balochistan is positioned at the confluence of the Indian and Eurasian tectonic plates, resulting in seismic activity. The region has seen earthquakes, and geological dynamics influence the building of mountain ranges and geological formations.

Balochistan's strategic importance is underscored by its role as a transit site for major natural gas conduits, such as the Iran-Pakistan-India (IPI) and Turkmenistan-Afghanistan-Pakistan- India (TAPI) projects. (Usmani, 2021)

3:2 Prospects

Balochistan, a province in Pakistan, is wealthy in natural resources, making it a land of immense capability for various sectors, especially in power assets. The location boasts substantial reserves of hydrocarbons, including oil and gasoline, with estimates indicating great untapped assets. Balochistan holds around 6 trillion barrels of oil and 19 trillion cubic toes of gasoline reserves, making it a key player in Pakistan's power landscape. The province's strategic area, bordering Iran and Afghanistan, and its widespread coastline along the Arabian Sea, in addition beautify its financial significance. Balochistan's strength capacity extends beyond conventional assets like oil and gasoline. The province has massive untapped resources in renewable electricity, consisting of wind, sun, and geothermal strength. Balochistan has seven wind corridors suitable for wind farms, supplying high capacity for the wind energy era. Moreover, the geothermal resources in regions like Koh-e-Sultan present a possibility to generate power, with estimates suggesting a potential of 10,000 MW for the usage of underground warm water. The

coastal regions of Balochistan also keep promise for wave strength technology, supplying a dependable source of energy for coastal cities like Gwadar and Pasni. Aside from power sources, Balochistan is wealthy in mineral deposits, such as iron, copper, gold, barite, lead, zinc, chromium, and coal reserves. (Admin, 2020)

3.2.1 Tackling Security Concerns

The security inconveniences in the Balochistan region, Pakistan, have been a longstanding issue because of different factors by and large with revolt, ethnic pressures, and international interests. Handling the ones inconveniences requires a multi-layered procedure that tends to both the establishment intentions of fighting and the moment security challenges. Balochistan has a reality of rebellion driven by the use of Baloch patriot organizations looking for additional independence and command over assets. The essential significance of getting the CPEC, which passes through Balochistan, is the requirement for security inside the area. The test offers new open doors for financing and improvement, underlining the meaning of guaranteeing an agreeable climate for its accomplishment. (Jamal, 2023)

3.2.2 Developing Infrastructure

The area is going through critical foundation projects, including the development of street organizations, energy offices, and a worldwide air terminal, pointing toward upgrading the network inside Balochistan and further developing shipping lanes for provincial financial exercises. The inadequacy of Balochistan's framework, enveloping unfortunate street organizations, confined energy accessibility, and the shortfall of contemporary ports, present significant impediments to the progression of asset extraction and financial development. Huge distances and harsh landscapes make framework advancement significantly testing, driving up building expenses and protracting project plans.

The territory, which makes up around 44% of Pakistan's property region, faces critical difficulties concerning network, admittance to fundamental administrations, and general advancement. In any case, the public authorities and global associations like the Asian Improvement Bank (ADB) have been effectively attempting to resolve these issues through different foundation projects. One of the key undertakings is the Public Parkway Organization Advancement in Balochistan, which means to restore and overhaul the region's street organization. (Adbheadhoncho, 2023)

3.2.3 Controlling Sardari System

The Sardari framework is a profoundly imbued social and political design in Balochistan, a territory in southwestern Pakistan. This framework is portrayed by the predominance of clan leaders, known as Sardars, who use huge power and impact over their clans and regions. At the core of the Sardari framework is the idea of ancestral association, where a clan is made out of different groups and sub-tribes. The boss or Sardar is normally chosen by the elderly folks of the factions, and this position is frequently inherited. The Sardar is answerable for keeping up with the rule of law, settling questions, and gathering charges from his clan. Consequently, the clan gives the Sardar faithfulness, support, and a portion of their assets. The Sardari framework is additionally intently attached to the idea of "Rajj," which alludes to the aggregate character and pride of the Baloch public. The Baloch are known for serious areas of strength for their freedom and libertarianism, and the Sardari framework is viewed as a way to keep up with this freedom and safeguard the clan's advantages.

One of the critical elements of the Sardari framework is the act of "Bejjari" and "Phodhi," where the Sardar gathers cash from his clan to address his issues. This training has been censured for propagating a culture of reliance and double-dealing, where the Sardar utilizes his ability to remove assets from his clan without offering sufficient types of assistance or advantages consequently. The Sardari framework has additionally been connected to the absence of advancement and modernization in Balochistan. The area stays perhaps of the most immature locale in Pakistan, with restricted admittance to training, medical care, and other fundamental administrations. The Sardari framework is viewed as a significant impediment to improvement, as it propagates a culture of support and nepotism, where assets are dispensed in light of ancestral connection as opposed to legitimacy or need. Regardless of its restrictions, the Sardari framework remains a strong power in Balochistan, and endeavors to change or cancel it have been met with opposition from the Sardars and their allies. (Collaboration to Consequence: The Sarkar-Sardar Nexus of Balochistan | Lok Sujag, n.d.)

3.2.4 Providing Availability of Communication Network

The correspondence community in Balochistan, Pakistan, is a simple part of framework development that assumes an urgent component in interfacing with individuals, working with trade, and upgrading by way of massive financial advancement. Balochistan faces vital difficulties around right here, along with limited admittance to modern correspondence and telecom framework, web availability,

and flexible groups.

Key areas such as road networks, energy resources, water management, education, healthcare, and communication infrastructure demand urgent attention. The province's road network is inadequate and poorly maintained, hindering transportation and economic growth, particularly in remote regions. Despite its rich energy potential, Balochistan struggles to harness resources effectively due to insufficient investment, infrastructure, and security concerns, leading to frequent power outages. Water scarcity and inadequate irrigation systems pose significant challenges to agriculture, affecting farmers' livelihoods and productivity. Furthermore, the province faces a digital divide, lacking modern communication and telecommunication infrastructure, limiting social and economic development opportunities. (Desk, 2021)

3.2.5 Economic Contributions

Energy assets in Balochistan are additionally basic to the commonplace and public economies. The region is basic to Pakistan's energy needs since it contains immense petroleum gas assets. The financial assets of the Balochistan region assume a critical part in upgrading Pakistan's basic guideline maturing. Balochistan is plentiful in gaseous petrol, coal, and mineral stores like copper, gold, and chromite. The Reko Diq mining project in Balochistan is likely to gobble up one of the circle's biggest copper and gold stores, with expected yearly creation of 900,000 to 2.2 million tons of copper. The region's petroleum gas fields contribute considerably to Pakistan's energy supply, office for a significant part of the republic's all-out flammable gas creation. The increment of the Gwadar port and related framework under the China-Pakistan Monetary Passageway (CPEC) improves Balochistan key significance for Pakistan's local network and exchange. Balochistan's beachfront areas and fisheries area contribute essentially to Pakistan's general fish creation, representing around 34% of the nation's absolute fisheries yield. The fishing business in Balochistan gives direct work to around 400,000 individuals and supports the livelihoods of maybe an equivalent number iofauxiliary enterprises.

Balochistan, one of Pakistan's biggest and most asset-rich districts, faces significant difficulties in fostering its monetary limit. Having broad mineral riches, Balochistan has the nation's second-most

noteworthy multi-layered neediness level, after just the past formally managed ancestral zones. The region's sparse metropolitan dissipated across a colossal area of domain is a huge deterrent to extension, with a low thickness of individuals, troublesome scenes, and costly per-unit administration conveyance costs. The shortage of thick urban communities causes regional imbalances, leaving Quetta as the district's just enormous city. (Khan and Liaqat, 2023)

3.2.6 Balochistan’s Resources and Impact on Pakistan’s National Power Potential

Balochistan, with its tremendous normal assets, offers an extensive commitment to Pakistan's general power potential. Among these assets, Balochistan flaunts the biggest petroleum gas held in Pakistan, essentially focused around the Sui gas field, which has been a pivotal provider of flammable gas to the remainder of the country for a long time. In any case, regardless of the double-dealing of these assets, the nearby populace has not received fair rewards. Also, Balochistan holds significant oil saves, even though Pakistan st sick depends on expanding imports of unrefined petroleum to satisfy homegrown interest. In any case, continuous investigation endeavors have brought about the revelation of new oil fields inside the area.

As far as coal, Balochistan has 55 million tons of estimated coal holds, addressing around 1.6% of Pakistan's complete coal savings. The common government expects to bridle these coal assets for the power age, yet challenges continue, especially concerning transmission foundation. Subsequently, a feeling of withdrawal and struggle continues inside the territory. Balochistan's financial advancement challenges, it is vital to zero in on further developing power supply, taking advantage of coal holds for the power age, and utilizing sustainable power potential. In addition, guaranteeing evenhanded dissemination of advantages from asset double-dealing is fundamental to mitigate hardship and encourage harmony and improvement in the district. (Mushtaq et al., 2012).

MAJOR FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

Findings

Balochistan has significant sun-oriented energy potential, with over 40% receiving 6-6 kWh/m2/day insolation. Improving Pakistan's public power and energy security is crucial. Balochistan's nuclear capacities are a foundation for its potential. Wind turbine development in Balochistan's sea shores is projected to be 42.5 TWh daily. Balochistan, located in southwest Pakistan, holds global importance due to its abundant resources, including petroleum and minerals, making it a hub for international trade and competition.

The increasing use of energy in Pakistan, particularly in Balochistan, is being addressed by the implementation of environmentally friendly power technologies. These include solar-based and windmills, which are sustainable and can be used to store and maintain energy. Balochistan has significant sun-based energy potential, with over 40% of the region receiving sunlight at 6 kWh/m2/day. The region also has significant wind energy potential, estimated at 20,000 MW. However, there is a need for further preparation, capacity building, and institutional support to expand the benefits of these renewable energy sources in the region.

Balochistan, Pakistan's largest land region, is crucial for its energy security and public power. Its abundant natural resources, including solar and wind power, have the potential to significantly improve the country's economy. However, the region faces challenges such as financial disparities, political instability, and ethnic tensions. Balochistan's infrastructure, including roads, ports, and communication networks, is essential for harnessing its natural resources. Investment in infrastructure projects can enhance resource extraction, transportation, and production, thereby increasing the region's financial commitment to public power. Compelling administration and a robust strategy system are essential for expanding the benefits of Balochistan's natural resources while addressing the concerns of nearby networks. Balochistan's natural resources hold significant potential for economic growth and development. The area is rich in mineral deposits valued at over USD 1 trillion, including valuable resources like gold, copper, diamonds, oil, precious stones, coal, chromite, and petroleum gas. These resources can significantly impact Pakistan's economy when managed carefully and responsibly. Despite these challenges, efforts are being made to explore environmentally friendly power sources,

particularly hydroelectricity.

Balochistan, Pakistan, is rich in mineral resources worth over USD 1 trillion, including gold, copper, dark pearl, oil, significant stones, coal, chromite, and petroleum gas. These resources have the potential to significantly impact Pakistan's economy when managed carefully and fairly. Copper and gold reserves are abundant, with mines like Saindak and Reko Diq holding significant reserves. Chromium, representing over 90% of the nation's total yield, is also a significant producer. Other minerals include titanium, gypsum, nickel, and coal. Titanium is essential for military and everyday programs, while gypsum is abundant in regions like Sibi, Barkan, Kohlu, and Loralai. Iron steel reserves are estimated at around 200 million hectares. Marble and sulfur deposits are abundant, with onyx marble found in regions like Chaghi, Julil, Mashkicha, and Butuk. These resources are highly sought after in the development industry due to their taste and potential for investment. However, challenges such as insufficient infrastructure and funding hinder their effective use. With proper governance, rule of law, and effective management, these resources can be harnessed to deliver wealth and development to the region, reducing conflict and discord. Balochistan's mineral wealth can transform not only the provincial economic system but also contribute significantly to Pakistan's global economic prosperity.

Balochistan's mineral exploration has revealed significant deposits of copper, gold, chromite, and other precious minerals, offering potential for economic growth and business development. The Reko Diq copper and gold project in Chagai district is one of the largest undeveloped deposits globally. Exploration activities have identified new mineral opportunities and exploration objectives, indicating untapped mineral wealth. Balochistan also has significant potential for agricultural growth, with fertile lands and sufficient water resources. Research has identified opportunities for fee-added agricultural manufacturing, contributing to rural livelihoods and food security. Balochistan's natural landscapes and historical sites also offer opportunities for tourism development. However, infrastructure deficiencies and security concerns pose challenges, necessitating coordinated efforts from government, non-public sector stakeholders, and local groups to improve infrastructure, security, and resource exploration.

Balochistan, located in the southwestern district of Pakistan, has a rich resource base, including coal, petroleum gas, copper, gold, and other minerals. These resources offer significant opportunities for economic growth, job creation, and infrastructure development. However, Balochistan faces challenges such as infrastructure limitations, security concerns, and administration issues. Coal reserves, particularly in Quetta, Harnai, and Duki, are crucial for fueling power generation and modern

events. Flammable gas reserves, which contribute significantly to Pakistan's energy sector, are also significant but face challenges such as inadequate infrastructure and unequal distribution of benefits. Addressing these issues is crucial for Balochistan's future development.

Balochistan, known for its mineral wealth, has significant opportunities for income generation, work creation, and modern development. The Reko Diq copper and gold project in the Chagai region is one of the largest untapped copper and gold reserves globally. However, overcoming challenges like lack of infrastructure, legal issues, security concerns, and natural effects is crucial. Balochistan also has potential for rural development due to its abundant terrains and water resources. However, horticultural efficiency remains low due to water shortages, outdated farming methods, and limited access to credit and markets. The travel industry, despite its potential, remains immature due to safety concerns, lack of infrastructure, and security threats.

Balochistan faces administration issues and ecological supportability challenges in managing its resources. Reinforcing administration components and improving responsibility are crucial for ensuring sustainable use. Balochistan has significant economic potential, but a comprehensive approach to balancing economic growth with social value and environmental protection is needed.

Recommendations

Balochistan's natural resources require improvements in foundation, administration, natural security, network commitment, and financing. Improving infrastructure is crucial for the exploration, extraction, and transportation of resources, such as improving roads, rail routes, and ports. Investing in power generation and transmission infrastructure is also essential for mining and manufacturing industries. Administration changes are necessary to improve transparency, accountability, and execution in resource management. Connecting with local networks and promoting social consideration can help manage conflicts over ownership and gifts. Environmental measures, such as environmental strategies and sustainable mining practices, can help reduce pollution and water scarcity.

Community commitment and capacity building are also essential for local populations to benefit from resource development drives. Providing incentives, tax reductions, and partnerships with international organizations can help achieve these goals. To improve the investigation of Balochistan's natural assets, several key ideas are essential. First, adopting advanced research techniques like 3D

seismic imaging and remote detection can enhance asset recognition, reducing investigation risks and increasing disclosure rates. Second, administrative changes can streamline endorsement processes and provide clear guidelines for land access and asset rights. Third, community commitment is crucial for building trust and reducing conflicts over land and asset ownership. Fourth, investing in transportation, energy, and water supply systems can reduce costs and access to asset-rich areas. Fifth, strict natural insurance measures are essential to limit the environmental impact of investigations. Lastly, limited building drives in geography, mining, and investigation are essential for promoting community skills and development. By implementing these ideas, Balochistan can unlock its natural asset potential, promote sustainable development, and secure financial growth.

Balochistan's natural assets can be improved by investing in foundation development, improving administration and structures, promoting local community engagement, and expanding the economy beyond asset extraction. This includes developing transportation, power, and water resources for asset extraction, handling, and transportation. Improving administrative structures can enhance transparency, responsibility, and maintainability in asset management. Engaging with local networks, income-sharing instruments, and limit-building drives can encourage social awareness and reduce conflicts over asset ownership. Expanding the economy beyond asset extraction can reduce reliance on unstable product showcases and promote sustainable development. Focusing on natural sustainability can mitigate the negative effects of asset extraction on biological systems, biodiversity, and nearby occupations. Implementing these ideas can lead to comprehensive and feasible asset development, promoting financial growth and enhancing the well-being of its citizens.

Conclusion

Petroleum gas is a crucial resource in Balochistan, crucial for energy production, economic growth, and personal satisfaction. However, understanding its full potential requires overcoming challenges and adopting sustainable practices. Balochistan's gaseous petrol assets significantly impact Pakistan's energy supply, but the region has not fully capitalized on its resources. Issues such as uneven gas distribution, lack of transparency in asset rights, and public complaints highlight the need for a more impartial approach to managing natural resource management. Coal, another vital resource, is crucial for Balochistan's economy, energy sector, and climate. Its use in power generation, modern cycles, and family use contributes significantly to Pakistan's energy mix and financial growth. However, achieving this

potential requires addressing challenges related to infrastructure, support, and feasible resource management.

Balochistan's coal resources can be utilized to develop a sustainable energy future for the present and future. Wind energy is another significant resource, offering opportunities for a more efficient and cost-effective energy system. Balochistan can harness its wind resources to expand its energy mix, reduce petroleum dependency, and contribute to environmental protection and economic growth. However, understanding the full potential of wind energy requires collaboration between government, private sector, and community partners. The sun-based energy potential in Balochistan offers a promising pathway for energy security, economic development, and natural sustainability. By utilizing its abundant sunlight resources and solar energy technologies, Balochistan can expand its energy mix, reduce petroleum dependency, and reduce ozone-damaging substance emissions. However, achieving the full potential of sun-based energy requires overcoming challenges and fostering a supportive environment.

Water resources are crucial for agriculture, horticulture, and economic development in Balochistan. Addressing water shortages, overexploitation of groundwater resources, and water quality issues can ensure the practical use of water resources for the present and future. Successful management, local cooperation, and mechanical advancements are essential for water security and flexibility in Balochistan's dry climate. However, more work is needed to address challenges in water management, including increasing water supply, reducing demand, and improving water quality. Balochistan's public authority has implemented various systems and plans to address water issues, with the support of international organizations like the Asian Development Bank. The region is known for its gold deposits, but the exact number of these deposits is not explicitly stated. The government has also addressed challenges in the mining sector, including the development of methods and plans to preserve mineral resources. Copper resources in Balochistan hold significant economic potential, but balancing their use with conservation efforts is crucial for sustainable development, environmental protection, and financial success. Cooperation between government organizations, mining organizations, local networks, and partners is essential for implementing sustainable mining practices and maximizing copper mining benefits while minimizing negative impacts on the environment and society. Balochistan should focus on reliable mining practices, mechanical advancements, and vital projects to maximize the benefits of its abundant copper resources for the country's prosperity.

Balochistan's chromite and limestone reserves can significantly contribute to the region's mineral development and economic growth. The country's rural resources are crucial for food security and

livelihoods, producing high-quality natural products, vegetables, and animals that are consumed privately, locally, and globally. Conservation of these resources requires effective practices that address issues like water shortage, environmental change, and land corruption. By adopting water management procedures, environmentally friendly practices, and sustainable land management, Balochistan can improve the sustainability of its rural areas. Government strategies, local community involvement, and biodiversity protection are also essential for the long-term viability of agribusiness in the region. Balochistan's agricultural sector is vital for providing essential supplements, income opportunities, and dietary variety to the local population. Addressing issues like water shortage, seed quality, and agrarian support can improve the use of these resources and ensure their conservation for sustainable farming.

Balochistan can enhance its farming area's sustainability by adopting effective water board methods, environmental practices, and improved stockpiling and transportation infrastructure. Government strategies, local community involvement, and value expansion through handling are crucial for the long-term sustainability of agribusiness in the region. Balochistan's beachfront areas offer significant potential for economic growth and ecological sustainability. However, managing these resources requires efforts to address natural issues like pollution, overfishing, waterfront degradation, and environmental change. Government drives, local participation, and global collaboration are essential for promoting sustainable development and ensuring the suitability of Balochistan's waterfront areas.

Gwadar Port, a key player in global trade, highlights the importance of responsible stewardship and economic management. By balancing financial growth with ecological protection, social conservation, and social consideration, Gwadar Port can harness its potential for positive change while protecting its natural and social legacy. The mountain ranges of Balochistan are a significant part of the region's geology and play a crucial role in shaping its environment, hydrology, and biodiversity. However, they face challenges like overgrazing, deforestation, and mining, and efforts should be made to protect these unique environments for future generations. Balochistan's desert areas are crucial to its culture, economy, and experiences, and despite facing challenges, they remain a significant part of Pakistan's heritage. Balochistan faces significant management challenges, including immature mining areas, security concerns, natural degradation, and environmental changes. Addressing these issues requires a comprehensive approach that combines training, investment, and sustainable practices. By focusing on asset management, Balochistan can unlock its full potential and ensure the prosperity of its people while maintaining the delicate balance of its environment.

The region has been involved in counter-psychological oppression efforts, including the

establishment of Counter-Fear monger Power and police training programs. However, the psychological militant threat remains high, with attacks by groups like the BLF and BLA. The global community is concerned about the situation, and the government must focus on the region's events and government support to address the root causes. The ecological and social implications of Balochistan require a comprehensive approach that includes public authority, community, and international organizations. Addressing the security situation in the region requires an all-encompassing approach that addresses both financial and political aspects. Addressing the non-accessibility of communication networks in the region requires efforts to maintain communication, ensure access to information, and promote transparency in communication channels.

The Sardari framework is a complex social and political structure in Balochistan, rooted in pre-pilgrim times and systematized by English provincial powers. It is characterized by clan leaders who hold significant power and influence over their clans and regions. Balochistan is Pakistan's largest and most resource-rich state, with significant natural resources such as solar energy, coal reserves, and coastal areas near the Middle Eastern Sea. Balochistan's natural resources are crucial for Pakistan's economic development, energy security, and public power. However, the region faces challenges in utilizing its natural resources, including insufficient infrastructure, security risks, and political instability. The data shows a slanted example of energy usage, with a significant portion of power and gas used in agriculture and power-generation areas. Investigating Balochistan's natural resources is essential for understanding its strengths, and internal security challenges, and strengthening Pakistan's public power and international standing. Addressing issues related to asset abuse is crucial for enhancing the region's potential and promoting comprehensive development that benefits both Balochistan and the wider country of Pakistan.

Balochistan's harsh natural environment and underdeveloped infrastructure, including roads, railroads, and power transmission networks, pose significant challenges to its economy. Internal security issues and rebellion have disrupted the ability to effectively utilize its resources, particularly in mineral, energy, and waterfront areas. Balochistan faces challenges in attracting private investment and fostering the necessary expertise to manage its resources effectively. Despite these challenges, Balochistan's abundant natural resources present opportunities for economic growth, particularly through the China-Pakistan Economic Corridor (CPEC). The CPEC presents significant opportunities for the maltreatment of the region's natural resources, but these resources have not been fully utilized due to the region's harsh natural conditions and underdeveloped infrastructure.

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Fig. 2. Geological Map of Balochistan Province. (Source: Geology Survey. . . (n.d.). ResearchGate. https://www.researchgate.net/figure/Geological-Map-of-Balochistan-Province-Source-Geology-Survey-of-Pakistan-1964_fig1_349208902

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