

INSIGHTS ON THE NATURAL RESOURCES IN BALOCHISTAN

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ABSTRACT

Natural gas from the Dera Bugti District in Balochistan has fueled Pakistan's industrial growth and domestic consumption for over sixty years. While Bolan Mining Enterprises and the Duddar Lead-Zinc Project in Lasbela District represent major mineral development efforts in the province, the only working metal mines in the nation are the Saindak and Reko Diq sites in Chagai District. Despite Balochistan's wealth of natural resources, these have not translated into economic prosperity for Pakistan; rather, they have led to a resource curse marked by extreme poverty, underdevelopment, and persistent internal conflicts. While Balochistan's resources and strategic location offer substantial economic potential for Pakistan, they have also contributed to serious law and order challenges, driven by sub-nationalism and ethnic insurgency. These insurgencies arise from deep-rooted grievances among Baloch nationalists, linked to ongoing resource exploitation, economic deprivation, and political marginalization. In addition to examining Balochistan's mineral and hydrocarbon resources, this study examines the interrelated themes of sub-nationalism, avarice, grievances, and the resource curse.

Keywords: Rich reservoirs, Natural Resources, Balochistan.^{*}Corresponding Author. E-mail: sadaf_hrl@yahoo.com**INTRODUCTION**

Pakistan's resource-rich province of Balochistan is home to important minerals like copper, gold, iron ore, zinc-lead, and chromite, as well as substantial hydrocarbon energy resources. It still has a low-level ethnic insurgency and is the least developed province in spite of its resources. Natural gas from Sui, Dera Bugti, has been piped out of the province for over 70 years, yet many peripheral areas still depend on wood fuel. The Chagai district, rich in gold and copper, exemplifies the stark poverty found in one of Pakistan's most impoverished regions. The federal government has benefited from

Balochistan's natural resources while ensuring that the province remains underdeveloped [1].

Although 50% of Balochistan is owned by the federal government, the provinces rely on natural resources as their main source of income. Balochistan produces 17% of the nation's gas supply, while only 7% is consumed, according to Pakistan's Ministry of Petroleum and Natural Resources. Just 13 of Balochistan's 32 district headquarters have access to natural gas, meaning that 59% of the city's population lacks basic energy supplies [2]. Although natural gas from Dera Bugti supplies two power plants



in Dera Murad Jamali, the electricity generated by the Uch Power Plant is not provided to Balochistan. The province produces 2,280 MW of electricity for the national grid but receives only 700-800 MW in return, resulting in 56 percent of Balochistan lacking electricity [3]. Access to electricity in the province is only 25 percent. Since the early 1950s, the central government has owed Balochistan compensation for siphoning off its natural gas to the rest of the country.

The federal government committed to giving the province 20% of the Saindak Project's shares after 2012 as part of the Balochistan Rights Package. It did not, however, contact the provincial administration before extending the lease deal with the Chinese corporation. The Director General of the Geological Survey of Pakistan estimates that the mineral deposit at Reko Diq is worth USD 1 trillion, and that the value of buried metallic and non-metallic resources is in the trillion dollars range [4]. The Reko Diq Project, which has faced international litigation, still does not benefit the local population. Additionally, Balochistan's approximately 800 km coastline along the Arabian Sea offers considerable marine resources for Pakistan. However, the Baloch natives of coastal areas have significant grievances regarding the exploitation of these aquatic

resources. The province has been persistently stripped of its natural wealth and denied its legitimate politico-economic rights, leading to ongoing political unrest and ethnic insurgencies. While multiple factors fuel the Balochistan conflict, economic issues remain its root cause [5-8].

SUI GAS RESERVOIRS

In the Sui region of Dera Bugti, Pakistan's largest natural gas field was found in 1953. Other provinces received the gas via pipeline for both residential and commercial consumption. Sui, Dera Bugti, and the rest of Balochistan citizens continued to live in poverty, which led to a feeling of resource exploitation, financial hardship, and political exclusion. Exploration of the gas field, which is controlled by Pakistan Petroleum Limited, started in 1955. Currently, production has further declined to 20 percent. With an estimated 12,038 billion cubic feet, it hosts Pakistan's largest gas compressor station and purification plant, with 88 wells producing approximately 418 million cubic feet of gas per day [9]. While Balochistan's share is decreasing, gas extraction from Sui has increased significantly, rising from 1,535 million metric cubic feet in 1955 to peak production of 387,368 MMCF in 2001. In the early 1990s, the extraction rate reached around 14 billion cubic meters.

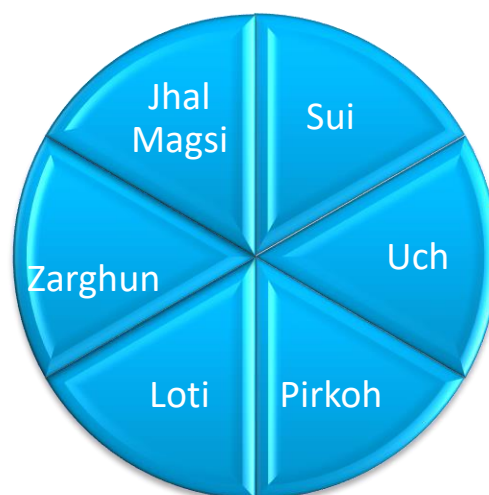


Figure 1: Prominent Gas Field in Balochistan.

The Sui gas field was leased to Pakistan Petroleum Limited on June 1, 1955, for a period of 30 years under the Pakistan Petroleum Production Rules of 1949. This lease was extended for another 30 years on June 1, 1985, expiring on May 31, 2015. After the lease ended, the federal and provincial governments disagreed over its renewal for nearly a year. On May 20, 2016, the Ministry of Petroleum and Natural Resources and the Government of Balochistan signed a Memorandum of Agreement that retroactively extended the PPL lease for an additional 10 years, effective June 1, 2015, in accordance with the Petroleum Policies of 2012 and 2013. Prior to the MoA, PPL continued gas production from the field despite strong protests from the provincial government, which argued that this violated the 18th Constitutional Amendment that grants equal rights to both federal and provincial governments over natural resources. The Sui gas field's wellhead price increased from 50-55% when the MoA changed the existing mining lease into a joint developing and production license. Furthermore, PPL was allowed to invest Rs 20 billion in exploratory activities in Balochistan over the course of the 10-year lease and agreed to pay the province government a lease extension bonus equal to 10% of the wellhead value [10].

RICH MINERAL RESOURCES AND PROJECTS

Balochistan is abundant in hydrocarbon and mineral resources, including copper, gold, coal, and iron. The province's gas and oil resources contributed approximately 15-20 percent to Pakistan's GDP. Despite this wealth, only 6 percent of the province has access to a gas supply. The Geological Survey of Pakistan estimates the country's total proven gas reserves at 30 trillion cubic feet, with 19.3 trillion cubic feet and 6 trillion barrels of oil reserves (both onshore and offshore) located in Balochistan. According to Pakistan's Economic Survey, the country has a total potential of 282 trillion cubic feet of gas, with recoverable

reserves of 24 trillion cubic feet and a production rate of nearly 4 billion cubic feet per day [11].

Dera Bugti, Kohlu, Lasbela, Kharan, Kalat, and Panjgur are among the Balochistani districts that the GSP has determined to have abundant oil and gas potential. The province has a variety of mineral resources as well. It is estimated that there are 650 metric tons of gold and 12.3 metric tons of copper in the northwest Chagai District. Balochistan also possesses 355 million tons of gypsum deposits and around 273 million tons of iron ore reserves. Nearly 80% of Pakistan's mineral production comes from the 41 minerals that are being explored in Balochistan out of the many more minerals that are available there [11].

Recently new minerals including the rare metal molybdenum, have been discovered in various parts of Balochistan. The province's marble reserves are estimated at 2.5 billion tons, granite at 1.5 billion tons, and onyx at 15-20 billion tons. Significant advancements in the atomic field have also been made by the GSP, which has discovered radioactive minerals in the Reko Diq area of Chagai and crucial minerals needed to prepare tunnels for nuclear blasts in the Sonmiani area of Lasbela. The Chagai-Raskoh Magmatic Arc, Chaman-Ornach-Nal Transform Fault Zone, Lasbela-Khuzdar Ophiolites and Melange Zone, and the Zhob-Muslim Bagh-Quetta-Kalat-Khuzdar-Lasbela Sediment-hosted Lead-Zinc-Barite-Fluorite Zone are some of Balochistan's notable metallogenic deposits. The Arabian Sea's Makran Trench and Flysch Zone are home to a large number of onshore and offshore oil deposits [13, 14].

For the first time, the Government of Balochistan has announced its Mineral Policy 2019, aimed at facilitating exploration in this revenue-rich sector. However, the province lacks the substantial resources needed to invest in its lucrative industry, and the federal government must extend its support to Balochistan.

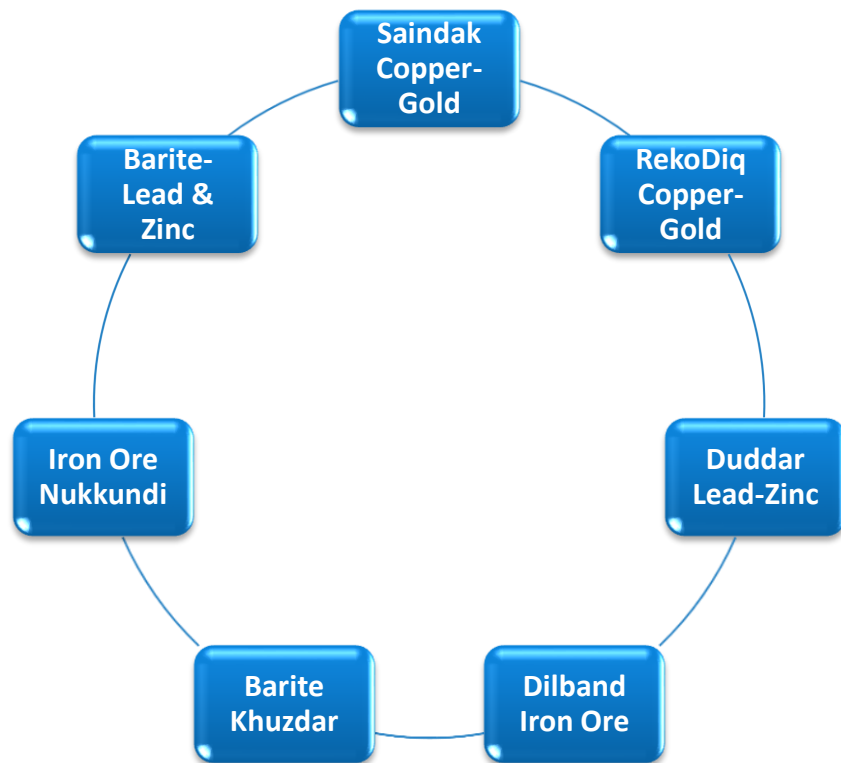


Figure 2: Salient Mineral Projects in Balochistan.

Saindak Copper and Gold Project

The Saindak Copper and Gold Project (SCGP) is located in the mineral-rich Chagai District of Balochistan, near the town of Saindak. It lies within the Chagai-Raskoh Arc, near the borders of Pakistan, Afghanistan, and Iran, and contains the country's largest active reserves of copper, silver, and gold. The U.S. Geological Survey later confirmed the 1961 discovery of copper reserves in Saindak by the Geological Survey of Pakistan. Consequently, in 1974, the state-owned Saindak Metals Limited, formerly called the Resource Development Corporation, was founded [15]. Government recommended awarding it to the Chinese state-owned Metallurgical Corporation of China. The former Chief Secretary of Balochistan, noted that the Musharraf government awarded the contract to the Chinese in exchange for their assistance in developing the Gwadar deep-sea port [16]. The management and operation of the SCGP were transferred from SML to MCC on November 13, 2001, under a 10-year leasing arrangement valued at more than

USD 350 million. For the term of the lease, SML was compensated with a 50% profit share and USD 0.5 million in rent annually. It was agreed that the Balochistan government would receive an additional USD 0.7 million in royalties each year. At the moment, the Saindak project is the only active location for the extraction of gold, silver, and copper in Pakistan. Subsequently, MCC changed its name to MCC Resources Development Company Limited. Under the agreement, MCC was entitled to 50 percent of the profits from the mineral project, while the Federal Government retained 48 % ownership of the SCGP. Initially, MCC paid only a 2 percent royalty to the Balochistan Government, based on the market price at the London Metal Exchange [17]. Based on current production levels, the SCGP is expected to generate Rs 1,300 million in income annually. With gold at 0.30 to 0.48 grams per ton and copper at 0.4 percent, the estimated reserves at Saindak are 412 million tons. The SCGP now produces 1.47 metric tons of gold, 2.76 metric tons of silver, and 15,672 tons of copper blister per

year [18]. The in-situ value of the contained metals is over USD 250 billion at current prices. Gold is a by-product of copper ore, and Saindak's copper porphyries contain significant amounts of both gold and silver.

Reko Diq Copper and Gold Project

The northwest region of Chagai District was found to contain substantial copper and gold reserves by the Geological Survey of Pakistan. Reko Diq is located on the eastern margin of the Tethyan Metallogenic Belt, which covers 33 countries and 7% of the Earth's surface, extending from Europe and Asia Minor to Southeast Asia. In 1993, the Balochistan Development Authority signed the Chagai Hills Exploration Joint Venture Agreement with BHP Minerals International Exploration Inc., granting the mining company 75% interest in the joint venture and the BDA 25% interest. However, mining operations did not begin until 2000, when BHP Minerals Inc. formed an Alliance Agreement with another Australian firm, Mincor Resources [19]. This collaboration led to the creation of the Tethyan Copper Company, incorporated in Australia to manage and finance exploration at Reko Diq. In April 2006, TCC's shares and exploration rights were jointly acquired by Antofagasta, a Chilean company, and Barrick Gold Corporation of Canada. The feasibility report indicates that the Reko Diq mine project is expected to last 56 years, with the Balochistan Government projected to receive an estimated annual revenue of USD 110.8 million, totaling USD 6.20 billion over 45 years. Based on current London Metal Exchange rates, the ground value of Reko Diq is estimated at USD 230 billion. Post-recovery, revenues are anticipated to reach USD 184 billion, with total profits projected at USD 110 billion, excluding operating costs of approximately USD 74 billion over the 50-year mining lifespan.

The provincial government made the decision to examine the lease agreement for the Reko Diq copper-gold project with BHP Minerals Inc. in late 2009, while the Reko Diq case was still ongoing in the Supreme

Court. Meanwhile, in 2011 Tethyan Copper Company Pvt. Limited of Australia filed for international arbitration against the Pakistani government at the International Center for Settlement of Investment Disputes for breaching obligations under the Australia-Pakistan Treaty on the Promotion and Protection of Investments, claiming USD 11.31 billion. In January 2013, then Chief Justice of Pakistan declared the contract between the Balochistan government and TCC null and void [20, 21].

With support from the Federal Government and other stakeholders, the Balochistan Government agreed to renegotiate and revise the Reko Diq project. The final deal with Canadian mining giant Barrick Gold and its Chilean partner Antofagasta was signed in 2022, concluding a decade-long legal battle and resulting in slightly more transparency. Under the revised agreement, Barrick will hold 50 percent ownership of the project, while the remaining 50 percent will be equally divided between the Balochistan province and the federal government. Antofagasta will also leave the project after giving Islamabad USD 900 million. Balochistani nationalist groups have voiced their reservations and opposed the updated deal. However, this new arrangement puts the government of Balochistan in a better position. The expected advantages of this copper and gold project for the local populace, such the generation of jobs and advancements in the social sector, have not yet been realized.

Duddar Lead-Zinc Project

The Duddar Lead-Zinc Project, situated in Balochistan's Lasbela District, ranks among the largest mineral reserves in Pakistan. Geological surveys have revealed the Jurassic rocks of the Lasbela and Khuzdar belts to be world-class deposits of zinc and lead ore. In December 1993, the Pakistan Mineral Development Corporation was granted a mining area of 1,500 acres at Duddar. On March 22, 2002, the PMDC entered into a Memorandum of Understanding with the MCC, which later

became known as MRDL. An agreement for the project's development was finalized on November 3, 2003, between the PMDC and MCC. The Duddar mine is estimated to contain 50 million tonnes of ore, with a grade of 7% zinc and 3.2% lead, potentially yielding 3.5 million tons of zinc and 1.6 million tons of lead.

MCC Duddar Minerals Development Company Pvt. Limited manages and operates the mine, comprising a consortium of three companies: MCC (51% share), Hunan Zhuzhou Non-ferrous Metals Smelter Co. Ltd. (34% shares), and Hunan Huang shaping Lead and Zinc Mines Co. (15% shares). In the 2010-11 fiscal year, the project produced 24,602 tons of lead zinc-leaf metal, valued at USD 14.78 million, of which Balochistan received only USD 1.84 million. Furthermore, the MCC has not played a significant role in improving the socio-economic conditions of the local communities in the area.

Bolan Mining Enterprises

The Government of Balochistan and Pakistan Petroleum Limited formed Bolan Mining Enterprises as a 50/50 joint venture. In Balochistan, BME is presently working on four mining projects: Barite-Lead and Zinc in Khuzdar, Iron Ore in Nukkundi, and Iron Ore in Dilband. For 30 years, PPL was given the right to mine the barite mineral reserves at Gunga, close to Khuzdar, as well as other minerals in the province. This permission was extended for another 30 years in 2004. The Gunga site has proven reserves of 1.28 million tons. Barite was discovered in Gunga, and a 300 km-long Khuzdar-Lasbela belt contains reserves of approximately 11 million tons, with inferred deposits of 40 million tons. Barite is used in textiles, paper, plastics, paints, rubber, glass manufacturing, cosmetics, medicine, and for value addition in automotive and electronic applications. BME produces 150,000 tons of barite annually.

Apart from barite, BME also recovers zinc-lead minerals in Khuzdar District and mines iron ore in the Dilband area of Kalat District

and the Nukkundi tehsil of Chagai District. PPL specialists estimate that Dilband has 200 million tons of iron ore resources, while the Chigendik and Pachinko areas of Nukkundi have 50 million tons. The Kalat District's Sarawan region is home to the Dilband mountain range, and Khuzdar is thought to have 80 million tons of lead-zinc deposits. Significant reserves in Dilband were discovered by the Geological Survey of Pakistan in 1998, and at current global prices, the in-situ value of the contained metals is approximately USD 24 billion. In 2003, Pakistan Steel Mills and BME signed an agreement for the use of 100,000 tons of indigenous iron ore from the Dilband deposits. However, similar to the Sui gas project, BME has had little impact on the socio-economic development of the local population in its mining areas [22].

UTILIZATION OF NATURAL RESOURCES

In many nations and areas, there is a causal link between internal conflicts and natural resources. Discussions regarding the resource curse, sometimes referred to as the paradox of abundance or Dutch disease, have been sparked by the politics around natural riches in Balochistan. This idea tackles the problems brought on by an abundance of resources and nations' inability to use them efficiently for the benefit of the general populace. The resource curse theory suggests that resource wealth can lead to high rates of internal conflict and underdevelopment. While natural resources can generate economic activity, they may also foster dependency and a rentier mentality [23].

In Balochistan, wealth from natural resources has spurred industrial growth in Pakistan's most populous provinces. However, within Balochistan, this wealth has fueled sub-nationalism and ethnic insurgency, largely due to the exploitative practices of the federal government. Many argue that while Balochistan's natural resources have benefited the federal government, they have become a curse for the province. The state's appropriation of

Balochistan's wealth and its failure to invest in the province's development are key drivers of contemporary insurgency. Nationalists' grievances were further justified when their natural resources were classified as federal subjects under the 1973 Constitution, in contrast to the provincial classification of resources in other provinces. Following the 18th Amendment, provinces gained 50% ownership of their natural resources, which were previously under federal control. The Petroleum Policy of 2012, which stipulates that lease production periods may be extended for a further five years through a formal bidding process involving pre-qualified businesses, must be carried out no later than one year prior to the lease term's expiration. This is in conflict with the Sui Gas Field Lease renewal.

The issue of gas royalties from the Sui Gas Field has long been a point of contention between the central government and the province. Former Senator Sanaullah Baloch highlighted that Balochistan produces gas worth USD 1.4 billion annually but receives only USD 116 million in royalties. The severity of this injustice is underscored by the Rs 120 billion in outstanding gas development surcharge arrears since 1955, which, according to the 7th National Finance Commission Award, are to be paid in annual installments of Rs 12 billion. Despite this, Balochistan has contributed approximately Rs 7.6 trillion to the federal government since 1955. This stark socio-economic injustice has led to significant political and economic grievances, culminating in revolt and rebellion in early 2005 when the tribal forces of Nawab Akbar Khan Bugti allegedly attacked the Sui gas plant with rockets and mortar rounds, igniting the fifth ethnic insurgency in the province, which persists today [24, 25].

The province was promised control of the project after the expiration of the previous five-year lease agreement; however, the federal government has extended this lease for a fourth time, despite lacking

constitutional authority to do so. The terms of the contract are frequently criticized by political parties in Balochistan for being disadvantageous to the province [26].

Even though Chagai is the most mineral-rich district in Pakistan, it is nevertheless among the poorest areas in Balochistan. With a land area of 5%, it is the largest district in Pakistan. It shares a 325-kilometer border with Iran and a 500-kilometer border with Afghanistan. For example, the mineral-rich Chagai's Nukkundi UC only gets an annual budget of Rs. 105,000, but taking up 2% of Pakistan's land. A corporate social responsibility provision is included in the lease agreement between SML and MCC with the goal of guaranteeing that the mining industry helps to empower and improve local communities. The MRDL claims to have invested over Rs.800 million in corporate social responsibility initiatives, including health facilities, water supply, power supply, roads, and technical training. Despite the millions generated from copper, gold, and silver resources at Saindak, the local people do not benefit from these resources, making the potential for additional advantages for the rest of Balochistan seem remote.

Balochistan, despite its vast and resource-rich landmass, lags behind other provinces in socio-economic development. The federal government has redirected its natural resources to foster growth in other provinces, resulting in the marginalization and underdevelopment of the native Baloch people. This persistent exploitation of resources and economic deprivation has bred a sense of political marginalization and radicalization among Baloch youth, placing Balochistan at the forefront of extremism, terrorism, and separatism—issues that pose significant security challenges for Pakistan.

CONCLUSION

The people of Balochistan are acutely aware of their deprivation regarding natural resources. Their coast and untapped treasures are being appropriated, and they

voice frustration over the federal government's exploitation of Balochistan's resources without delivering tangible benefits to the province. This frustration is particularly justified as residents of Dera Bugti are denied gas supplies that pass through their villages route to cities and factories in other provinces. Balochistan's natural resources have amplified its geopolitical and geo-economic importance in regional power dynamics, intricately linked to the ongoing ethnic insurgency.

The geo-economic potential of Balochistan, including Gwadar Port, Reko Diq, and other natural resources, as well as energy and trade transit routes, remains largely untapped. A comprehensive, fair, and acceptable model for resource distribution among the provinces is crucial. Only until security issues are sufficiently resolved, especially by reducing the Indigenous population's sense of resource exploitation, economic hardship, and political marginalization, can Balochistan's geopolitics be turned into geoeconomic potential. Nevertheless, the central government prolonged the leasing arrangement without provincial authorization, failing to meet this obligation. It is necessary to annul and reevaluate the controversial lease extension agreements for the Saindak Project and the Sui Gas Plant. The revised agreement for Reko Diq must benefit the ordinary people of District Chagai, Rakhsan Division, and ultimately all of Balochistan by providing jobs, healthcare, technical education, road infrastructure, clean drinking water, and other essential civic services. Fair and equitable resource distribution is a fundamental principle of federalism; Balochistan deserves its rightful share and constitutional control over its natural resources.

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REFERENCES

1. An Overview of Pakistan's Mineral Potential, Natural Resources Wing: Ministry of Petroleum and Natural Resources, Government of Pakistan, <http://www.gsp.gov.pk>.
2. Balochistan Economic Report: From Periphery to Core" Volume II, (2018). Government of Balochistan, World Bank and the Asian Development Bank, p. 52.
3. Economic Survey of Pakistan 2013-14, (2014). Department of Finance, Government of Pakistan, p.188.
4. Kaiser Bengali, (2018). A Cry for Justice: Empirical Insights from Balochistan, Karachi: Oxford University Press, p. 7.
5. Maliha Tariq, (2014). Conflict in Balochistan: Natural resources and way forward, Strategic Studies Journal Institute of Strategic Studies, Islamabad, Vol. 33, Numbers 3 & 4, p. 23.
6. Petroleum Exploration and Production Policy, (2012). Ministry of Petroleum and Natural Resources, Government of Pakistan, p. 15.
7. Richard Schodde, (2014). Overview of Exploration in the Tethyan, Society of Economic Geologist Conference Turkey, Min ex Consulting: Strategic advice on mineral economics and exploration, <http://www.minexconsulting.com>.
8. Yunas Samad, (2016). Understanding the insurgency in Balochistan, State and Nation-Building in Pakistan: Beyond Islam and Security, New York: Routledge, p. 127.
9. Younas, M., S.A. Hussain, M.A. Hafeez and M.S. Malkani (1995) Geology of Kalag area 31N/13, Panjgur District, Balochistan, Pakistan. GSP IR (582): 1-16.
10. Siddiqui, R.H. (1996) Magmatic evolution of Chagai-Raskoh arc terrane and its implication for porphyry copper

- mineralization. *Geological* (2): 87-119.
11. Siddiqui, R.H., M.A. Khan, M.Q. Jan, I.H. Brohi (2010) Paleocene tholiitic volcanism and oceanic island arc affinities of the Cgagai arc, Balochistan, Pakistan. *Sindh University Research Journal (Science Series)* 42 (1): 83-98.
 12. Malkani M.S., Tariq M. 2004. Discovery of barite deposits from the Mekhtar area, Loralai District, Balochistan, Pakistan. In abstract volume National Conference on Economic and Environmental sustainability of Mineral resources of Pakistan, Baragali, Pakistan, 48.
 13. Malkani M.S., Wilson J.A., Gingerich P.D. 2001. First Dinosaurs from Pakistan. *Journal of Vertebrate Paleontology (USA)*, Volume 21(3): 77A.
 14. Nabil Ahmad Sindhar 2024. Monitoring in the modern digital era. *Integration of Mankind and Society*. 1, 1 (Feb. 2024), 20–30. <https://doi.org/10.56770/ims2024114>
 15. Malkani M.S. 2014. Mineral resources of Sindh Province, Pakistan. Abstract Volume, Earth Sciences Pakistan, Baragali Summer Campus, University of Peshawar, August 29-31, Pakistan, *Journal of Himalayan Earth Sciences*, abstract volume, 57-58.
 16. Findlay, Merrill (Oct-Nov.2007), "Balochistan - The Invisible War, Politics Natural Resources and War in Remote Pakistan," *Arena Magazine*, no. 91, pp. 36 – 38.
 17. Muneer, T. and Asif, M. (May 2007) "Prospects for Secure and Sustainable Electricity Supply for Pakistan," *Renewable and Sustainable Energy Reviews*, vol. 11, issue 4, pp. 654-671.
 18. Nie, M. (2003) "Drivers of Natural Resource-based Political Conflicts," *Policy Sciences*, 36, pp. 307-341.
 19. Mukherji, M. (2006) "Political Ecology of Groundwater: The Contrasting Case of Water-Abundant West Bengal and Water-scarce Gujarat, India," *Hydrogeology Journal*, 14, pp. 392–406.
 20. Turner, M. D. (Sept. 2004) "Political Ecology and the Moral Dimensions of "Resource Conflicts": The Case of Farmer–Herder Conflicts in the Sahel," *Political Geography*, 23(7).
 21. Moore, DS. (Oct. 1993) "Contesting Terrain in Zimbabwe's Eastern Highlands: Political Ecology, Ethnography and Peasant Resource Struggles," *Economic Geography*, vol. 69, no. 4, *Environment and Development*, Part 2, pp. 380-401.
 22. Nie, M. (2003) "Drivers of Natural Resource-based Political Conflicts," *Policy Sciences*, 36, pp. 307-341.
 23. Shahbaz B. et al. (2008) "Trees, Trust and the State: Analysis of Participatory Forest Governance in Pakistan and Tanzania," *International J. Development*, 20, pp. 641-653.
 24. Noraiz Arshad, Muhammad Imran and Muhammad Binyamin 2025. CPEC nexus: Challenges and projects and future implementation. *Integration of Mankind and Society*. 2, 1 (Feb. 2025), 7–11. <https://doi.org/10.56770/ims2025212>
 25. Ahmed, Iftikhar et al. (2007) "National Finance Commission Awards in Pakistan: A Historical Perspective," *PIDE Working Paper 33*, Pakistan Institute of Development Economics (PIDE), Islamabad, Pakistan.
 26. Twyman, C. (2001) "Natural Resource Use and Livelihoods," *Economic Geography*, vol. 69, no. 4, *Environment and Development*, Part 2 (Oct., 1993), pp 380-401 and "Botswana's Wildlife Management Areas," *Applied Geography*, 21(1), January 2001, pp. 45-68.