

Barriers of Mining and Minerals on Social Economics in Awdal, Sanaag and Marodijeh in Somaliland

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Abstract:- The primary objective of this research was to emphasize barriers of mining and minerals in Somaliland. A questionnaire was conducted in three mining sites in Marodijeh, Awdal and Sanaag regions in Somaliland. The mineral potential of Somaliland has not been thoroughly explored or investigated.

Since colonial and post- independence times, the country has remained one of the last frontiers, offering chances and surprises to those that go into it. Now, there is an almost insatiable appetite for commodities, particularly mineral resources.

As demand and prices grow and producing resources diminish, the global commodity business is looking for new frontiers to meet demand. Somaliland is a newly explored frontier area that is ready to divulge its secrets of oil, gas, uranium, platinum, rare earth metals, gold, copper, iron, manganese, tin, and gemstones. Mining and Minerals has a key role in Pillar One (economic development), which envisions a nation whose citizens enjoy sustained economic growth and reduced poverty levels.

Somaliland is believed to contain a huge hydrocarbon resource and vast coal resources, estimated at 6 billion tons occur near Berbera (Ali, 2009). From 2020 to 2022.

Somaliland mining and mineral resource sector has been hampered by several challenges including the weak regulatory framework: Somaliland mining and mineral sector face weak enforcement of legal frameworks and policies in the mining and mineral sector.

Improve the regulatory environment. The Ministry of Energy and Minerals should review and update its mining laws and regulations to make them more attractive to foreign investors. This could include streamlining the permitting process, reducing taxes and royalties, and providing other incentives to exploration companies.

Keywords:- Mineral Potential, Barriers, Mining, Somaliland, Component; Formatting; Style; Styling; Insert .

I. INTRODUCTION

Somaliland is situated on the northern side of the Horn of Africa with the Gulf of Aden to the north, Somalia to the east, Ethiopia to the south and west, and Djibouti to the north-west. The morphology of the country is typical of areas in extension, with basins and mountains of up to 2000 m [1].

The geology of Somaliland has been surveyed more actively since the end of WW II. The geology of the area was first described by Macfadyen (1949) and several reports compiled by the Geological Survey of the Former Somaliland Protectorate in the 1950's. MacFadyen's report "Water Supply and Geology of Part of British Somaliland" (1951), made a valuable contribution to the knowledge of the geological and hydrogeological conditions. The report includes data on meteorology, stream flows, surface geology, borehole logs of the shallow aquifer in the Hargeisa, Ceerigabo and Burco. Records of the 46 boreholes (3,200 meters were drilled) for water supply of Hargeisa during 1931-1939 are also reported by MacFadyen [2].

Nephrite jade is of wide interest, not only for its value as a highly valued precious stone, but also for its significance in tracing geological and petrological processes. Here, we report the first discovery of a nephrite deposit in Africa, located in Somaliland. Field investigations revealed that two open nephrite pits at Goodieood and Laasmacaane are composed of a series of discontinuous vein-shaped nephrite bodies stretching for 2 km and defining a nephrite belt. Dolomitic marble and epidote-amphibole are the major rock types in this nephrite belt [3].

Somaliland has produced gem-quality garnet, opal, emerald, aquamarine, and several other gem materials (Kinnaird & Jackson 2000). At the February 2020 Tucson gem shows, one of the authors (AMY) had some recent production of rough and cut orange garnets from Somaliland [4].

At the February 2020 Tucson gem shows, one of the authors (AMY) had some recent production of rough and cut orange garnets from Somaliland. According to his contacts in the mining area—including dealer Ahmed Shekh, a miner named Abdikarim and archaeologist Mohamed Abdi Allamagan the garnet-bearing area is situated in an area measuring approximately 10 km that is located just south-west of the town of Daarbuduq (or Da'ar buduq), which is in between the capital city of Hargeisa and the coastal city of Berbera [5].

II. SOMALILAND MINERAL POLICY

Somaliland has a mineral policy that maximizes the national economic benefits from the development of mineral resources through diversifying the country's minerals production and promotes a more sustainable economy.

Somaliland mineral policy has been approved by the Somaliland parliament in 2022 and now it's active.

A. Mineral Potential

The mineral potential of Somaliland has not been thoroughly explored or investigated. Since colonial and post-independence times, the country has remained one of the last

frontiers, offering chances and surprises to those that go into it.

Now, there is an almost insatiable appetite for commodities, particularly mineral resources. As demand and prices grow and producing resources diminish, the global commodity business is looking for new frontiers to meet demand. Somaliland is a newly explored frontier area that is ready to divulge its secrets of oil, gas, uranium, platinum, rare earth metals, gold, copper, iron, manganese, tin, and gemstones.

Sixty-one heavy mineral enriched samples along the Somaliland coast from Eil Sheikh to Ras Khatib, about 130 km, were analyzed using X-ray Fluorescence, X-ray Diffraction and SEM-EDS techniques. The study reveals that a considerable amount of heavy minerals is present along the Somaliland coast and confirms the presence of high concentration titanium and iron bearing minerals. However, the backshore deposits in the mouths of Waaheen and Biyo Gure ephemeral rivers as well as raised paleo-beaches in the east of port city of Berbera demonstrate the highest level of titaniferous heavy minerals with most samples showing concentration greater than 50 wt %. The titanium detected in geochemical analysis occurs in the form of ilmenite, rutile, titanite and titaniferous magnetite.

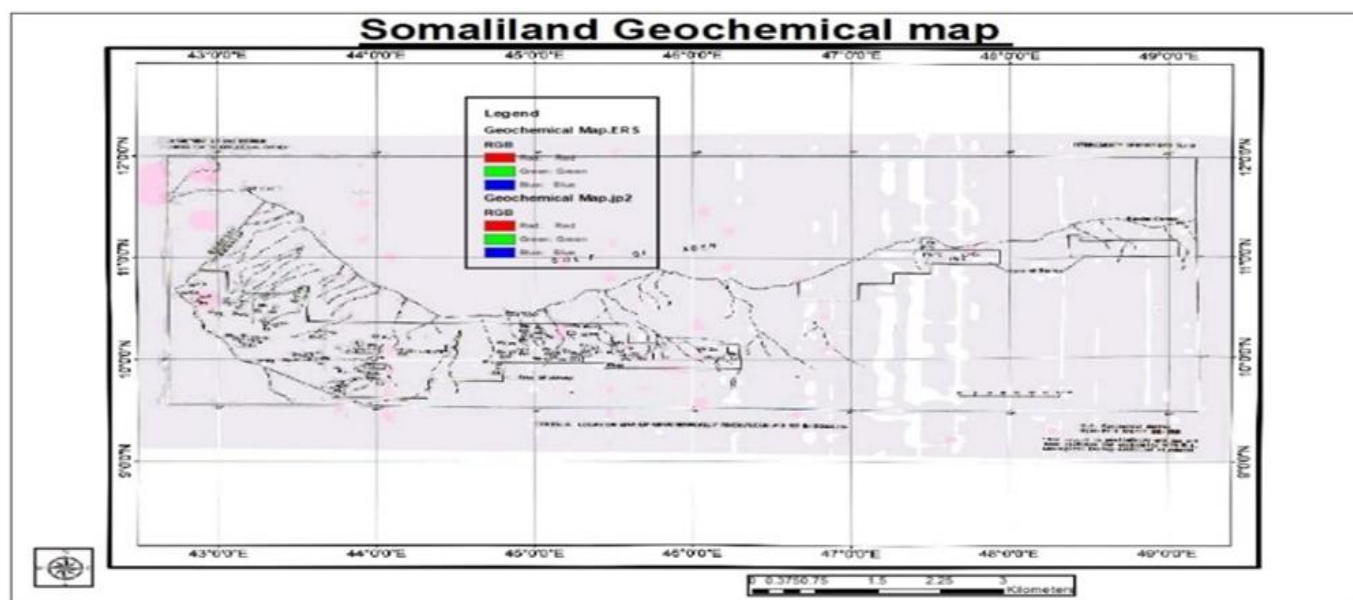


Fig 1: Somaliland Geological Map

B. Coal and Cement Potential

In the early 1980s, a cement plant became operational at Berbera in Somaliland, however, the lack of proper maintenance, shortage of spare parts, lack of managerial staff and skilled workers during the civil war caused the closure of this plant and termination of cement production.

National cement consumption was estimated to be about 250 000 metric tons in 2012, in view of this fact some plan to restart the country's only cement plant at Berbera in Somaliland appears in recent time.

The abandoned quarry with massive limestone of Mesozoic age reach in belemnites is situated near Berbera cement plant. Two samples of limestone were collected there in co-operation with Ministry of Water and Mineral Resources and transported to laboratories of Institute of Geonic of the Czech Academy of Sciences.

From the chemical composition point of view the tested limestone is suitable for cement production [6].

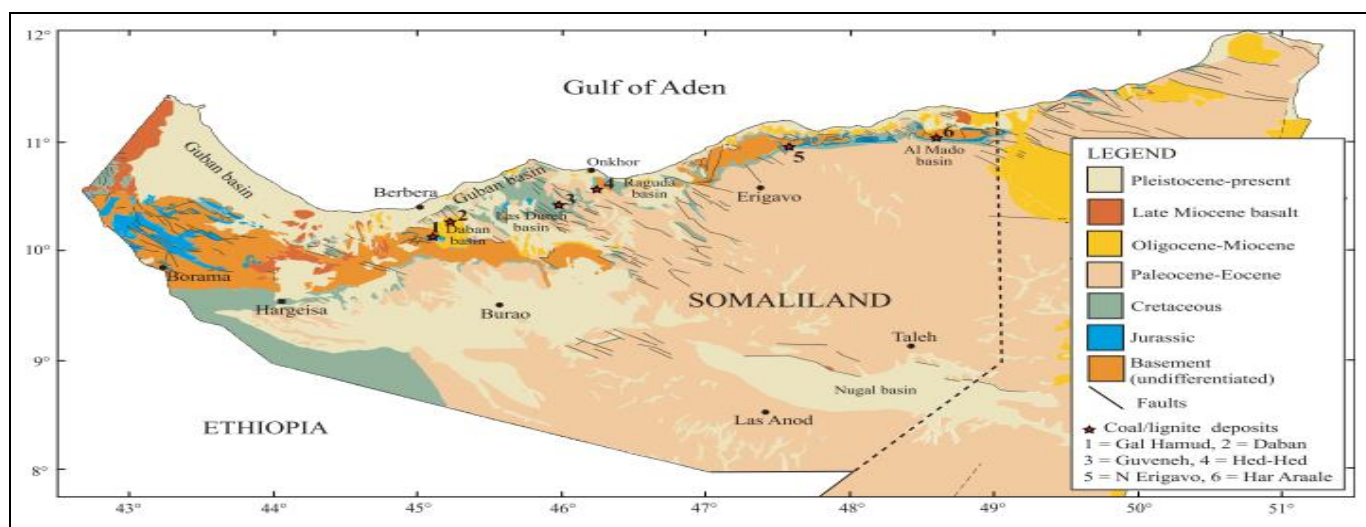


Fig 2: Source Modified from Abbate et al. (1993b).

III. SITUATIONAL ANALYSIS

Mining and Minerals has a key role in Pillar One (economic development), which envisions a nation whose citizens enjoy sustained economic growth and reduced poverty levels. A sound energy sector will stimulate economic growth, social development, agriculture productivity, industrialization, and mining.

The sub-sector as a mining can potentially have positive impacts in Somaliland on job creation, community development, and local economies. To secure this potential, the Somaliland government promotes the principle of corporate social responsibility when granting exploration rights to private companies.

Development of the mineral’s potential could also help in mainstreaming the local communities (including tribal communities) by sharing the economic benefits of

mining related activities with them in a fair and equitable manner through mechanism that give them consultations and enable them to adopt changes at a pace of their consulting. The mineral sector can potentially change the situation by providing much needed employment and infrastructure creation needs.

Somaliland is endowed with varied mineral resources including gold, silver, base metals, chromium, cobalt, industrial minerals (gypsum and celestite), and precious stones (emerald and agate). Somaliland is believed to contain a huge hydrocarbon resource and vast coal resources, estimated at 6 billion tons occur near Berbera (Ali, 2009). From 2020 to 2022, the ministry carried out mineral exploration for total potential areas 2373 sq.km which is equivalent to 6% of total basement areas of 30,000 sq.km. Details of mineral explorations carried out between 2020-2022 in Marodijeex, Awdal, Sanaag and Sahil regions.

Table 1: The Total Potential (Basement Areas) for Minerals is 30,000 sq. km

Zone	Region	Area (km ²)	Target Minerals
Abdiqadir	Salal	896	Base-Metals and Gold
Dhagah-kurreh	Gabiley	160	Base-Metals and Gold
Damaan	Sahil	120	Gypsum and Limestone
Laalays	Sahil	309	Heavy Mineral Sand and Gold
Laasa-Surad	Sanaag	288	Base-Metals and Gold
Total Area Explored		1773/2373	6% of Total Potential

A. Challenges

Somaliland mining and mineral resource sector has been hampered by several challenges including:

- Weak regulatory framework: Somaliland mining and mineral sector face weak enforcement of legal frameworks and policies in the mining and mineral sector.
- Human capacity constraints: There is shortage of specialized local manpower in the field of mining, mineral geology, geo-physics and reservoir and production engineering.

- High expectations from host community leading to conflicts
- Low value addition for mineral resources
- Environmental and health concerns
- Inadequate infrastructure development of the requisite network of roads.

The mining and mineral sector needs to prepare for facing the challenges in view of increasing demand.

IV. RESEARCH METHODS

A. Study Area

This study was carried out at some mining sites in Marodijeh, Sanaag and Awdal regions in Somaliland. The data collected in this study were both primary and secondary data, and a questionnaire was constructed with a target population of 26 respondents from various regions in Somaliland.

➤ The target population has been grouped as follows:

- Artisanal miners
- License holders
- Ministry of Finance and Ministry of Investment
- University Students (Geology graduates)
- Local community (Miners)

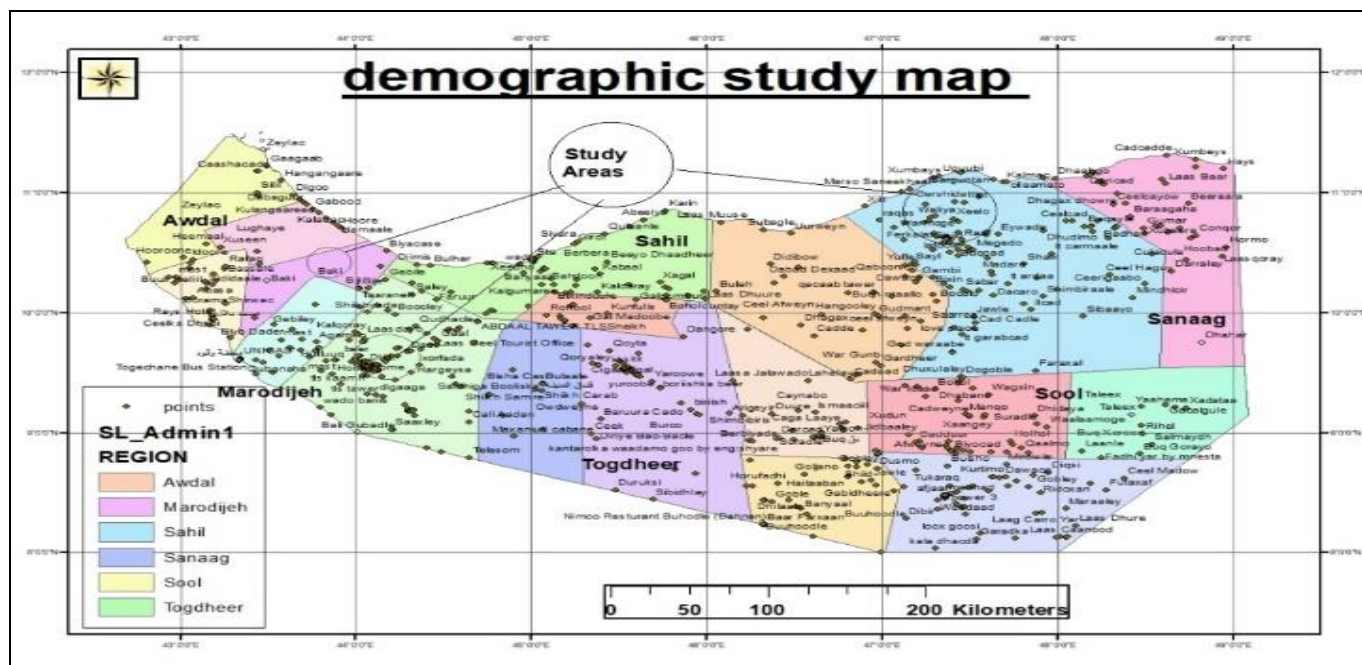


Fig. 3. Demographic of the Study Area

B. Research Design

A cross-sectional study was conducted at those areas mentioned above from August to October 2023 to assess barrier of mining and minerals on socio economics in Somaliland.

C. Data Analysis

Data was entered into Microsoft Excel spread sheet 2019. Descriptive statistics were used to determine the frequencies and percentages, all statistical analysis was performed using SPSS software package.

V. RESULTS AND DISCUSSION

A. Demographic Characteristics of the Respondents

Demographic characteristics of the respondents such gender, age, education level and occupation of the miner were collected. Out of 26 respondents interviewed, 11.5% were female where the rest 88.5% were males. Similarly, 9.9 %, 73 % and 16.9% of the respondents were 18-25 years, 25-35 years, 36-46 years,46-55 years and above 56 years respectively on the other hand, 7.7% were Illiterate Level, 3.8 % were primary level, 3.8% were secondary level, and 84.6 were university level of the respondent’s education level.

Table 2: Gender of the Respondents

Sex	Frequency	Percent
Female	3	11.5
Male	23	88.5
Total	26	100.0

As shown in Table 2, the sex of the respondents out of 23(88.5%) were males, were the 3 (11.5%) were females, the total number were 26 of respondents.

Table 3: Educational Level of the Respondents

Education	Frequency	Percent
Illiterate Level	2	7.7
Primary Level	1	3.8
Secondary Level	1	3.8
University Level	22	84.6
Total	26	100.0

As shown in Table 3, the education of the respondents out of 2 (7.7 %) were illiterate, were 1 (3.8%) were primary level, were 1(3.8) were secondary level, and were 22 (84.6) were University level. The total number was 26 respondents.

Table 4: Occupational Level of the Respondents

Occupation	Frequency	Percent
Company Manager	9	34.6
Employee of the Company	3	11.5
Government	9	34.6
Local Community (miners)	2	7.7
Universities	3	11.5
Total	26	100.0

As shown in Table 4, the occupation of the respondents out of 9 (34.6%) were company manager, were the 3 (11.5%) were Employee of the company, were 9 (34.6%) were Government staff, were 2 (7.7%) were Local Community Miners, and were 3 (11.5) were University students. The total number were 26 of respondents.

Table 5: The Discovery of Unexplored Mining Sites is an Opportunity to Find Investment to Boost the Country's Economy

Variables	Frequency	Percent
No	1	3.8
Yes	25	96.2
Total	26	100.0

Out of 26 respondents interviewed, 96.2 % of the respondents were agreed that finding investment opportunities in mining sector contributes to the growth of the country's GDP, whereas the rest 3.8 % weren't believe finding investment opportunities in mining sector contributes to the growth of the country's GDP.

Table 6: Do you Believe Improving the Knowledge and Skills of Artisanal and Small-Scale (ASM) Miners will Increase the Country's Mineral Production?

Variables	Frequency	Percent
Agree	25	96.2
Disagree	1	3.8
Total	26	100.0

Out of 26 respondents interviewed, 96.2 % of the respondents were agreed that improving the knowledge and skills of Artisanal and Small-scale (ASM) miners will increase the country's mineral production, whereas the rest 3.8 % weren't agreed improving the knowledge and skills of Artisanal and Small-scale (ASM) miners will increase the country's mineral production.

Table 7: Do you Believe Mineral Resources are Sources of Income for Individuals and the Nation as a Whole?

Variables	Frequency	Percent
Agree	13	50.0
Disagree	2	7.7
Strongly agree	11	42.3
Total	26	100.0

Out of 26 respondents interviewed, 50 % of the respondents were agreed that mineral resources are sources of income for individuals and the nation, were 42.3% were strongly agreed that mineral resources are sources of income for individuals and the nation as a whole, whereas the 7.7 % weren't agreed mineral resources are sources of income for individuals and the nation.

Table 8: Do the Mining and Mineral Resources Improve Local Services and Infrastructures?

Variables	Frequency	Percent
No	3	11.5
Yes	23	88.5
Total	26	100.0

Out of 26 respondents interviewed, 88.5% of the respondents were believed that mining and mineral resources improve Local services and infrastructures, whereas the rest 11.5 % weren't believe that mining and mineral resources improve Local services and infrastructures.

Table 9: Designing and Implementing Production Sharing Agreements for the Private Mining Sectors Increases Revenue Generation of the Country

Variables	Frequency	Percent
No	7	26.9
Yes	19	73.1
Total	26	100.0

Out of 26 respondents interviewed, 73.1 % of the respondents were agreed that designing and implementing production sharing agreements for the private mining sectors increases revenue generation of the country, whereas the rest 26.9 % weren't agreed that designing and implementing production sharing agreements for the private mining sectors increases revenue generation of the country.

Table 10: The Establishment of a Comprehensive Mineral Gemology Analysis Center will Boost the Economy.

Variables	Frequency	Percent
No	4	15.4
Yes	22	84.6
Total	26	100.0

Out of 26 respondents interviewed, 84.6 % of the respondents were agreed that the establishment of a comprehensive mineral gemology analysis center will boost the economy, whereas the rest 15.4 % weren't agreed that the establishment of a comprehensive mineral gemology analysis center will boost the economy.

Table 11: Increasing Production and Access to the Market will Increase the Revenue of the Country.

Variables	Frequency	Percent
Agree	24	92.3
Disagree	2	7.7
Total	26	100.0

Out of 26 respondents interviewed, 92.3 % of the respondents were agreed that Increasing production and access to the market will increase the revenue of the country, whereas the rest 7.7 % weren't agreed that that Increasing production and access to the market will increase the revenue of the country.

Table 12: Are there Insufficient Funds Available for the Central Government and External Investments in the Mining and Minerals Sector?

Variables	Frequency	Percent
No	4	15.4
Yes	22	84.6
Total	26	100.0

Out of 26 respondents interviewed, 84.6 % of the respondents were agreed that there are insufficient funds available for the central government and external investments in the mining and minerals sector, whereas the rest 15.4 % weren't agreed that there are insufficient funds available for the central government and external investments in the mining and minerals sector.

Table 13: Illegal Mining Practices have a Negative Impact on the Country's Productivity in Terms of Mining and Minerals

Variables	Frequency	Percent
No	5	19.2
Yes	21	80.8
Total	26	100.0

Out of 26 respondents interviewed, 80.8 % of the respondents were agreed that illegal mining practices have a negative impact on the country's productivity in terms of mining and minerals, whereas the rest 19.2 % weren't agreed that illegal mining practices have a negative impact on the country's productivity in terms of mining and minerals.

Table 14: Does the Weak Enforcement of Legislation Address Issues and Challenges of Mining and Mineral Resources?

Variables	Frequency	Percent
Agree	19	73
Disagree	7	27
Total	26	100.0

Out of 26 respondents interviewed, 73 % of the respondents were agreed that the weak enforcement of legislation address issues and challenges of mining and mineral resources, whereas the rest 27 % weren't agreed that the weak enforcement of legislation address issues and challenges of mining and mineral resources.

Table 15: Do you Think High Expectations from the Host Community Lead to Conflicts?

Variables	Frequency	Percent
No	7	26.9
Yes	19	73.1
Total	26	100.0

Out of 26 respondents interviewed, 73.1 % of the respondents agreed that the high expectations from the host community lead to conflicts, whereas the rest 26.9 % weren't agreed that the high expectations from the host community lead to conflicts.

Table 16: Do you Believe Mining Activities Cause Environmental, Health and Safety Effects on the Local Communities?

Variables	Frequency	Percent
No	2	7.7
Yes	24	92.3
Total	26	100.0

Out of 26 respondents interviewed, 92.3 % of the respondents were believed that the mining activities cause environmental, health and safety effects on the local communities, whereas the rest 7.7 % weren't believed that the mining activities cause environmental, health and safety effects on the local communities.

VI. RECOMMENDATIONS

- The discovery of unexplored mining sites to find investment to boost the country's economy.
- improving the knowledge and skills of Artisanal and Small-scale (ASM) miners
- finding investment opportunities in the mining sector that will contribute to the growth of the country's GDP.
- Designing and implementing production sharing agreements for the private mining sectors increases revenue generation of the country.
- The establishment of a comprehensive mineral gemology analysis center that will add value to minerals.
- Establish Geological research association center.
- Create a one-stop shop for mining investors.
- Establish a mineral development fund. Promote sustainable mining practices.

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