

MINISTRY OF MINING

STRATEGY: 'GOLD 2025' PROGRAM

DECEMBER 2015

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Strategy Rationale and Demand

The National Gold Program of 1992 - 2004 was successfully implemented, making a significant contribution to the economic growth of Mongolia. According to the National Statistics Office of Mongolia, gold production accounts for 2.6% of the country's GDP, 9.6% of mining production and 9.1% of export revenue. Mongolia's current gold reserves are estimated to exceed 2,000 metric tons ("t" or "tonnes"), both in deposits, in which gold is the principal metal and those in which gold is secondary to other metals.

Recent amendments to gold sector legislation and taxation policy have had a positive impact, resulting in a steady increase in gold sales and export revenue. The nation's total gold production was 5.9 t in 2012, grew to 12 t in 2014, and is expected to have hit 15 t in 2015. Gold sales to the MongolBank (the Mongolian Central Bank) rose from 6 t in 2013 to 12.7 t in 2014. The percentage of gold purchased by the MongolBank from artisanal operators grew markedly from 0.1% in 2013, to 25.5% in 2014 and 45.7% in 2015 (as of end October). From 2013 to 2014, the respective total gold sales revenue of these miners (in Mongolian Tugrik) almost doubled, from an equivalent of US\$270.4 million to US\$514.5 million.

Share of gold sales revenue contribution to the national total foreign currency reserves was estimated at between 4% and 7% in 2010-2013 and increased to 40% in 2014. Total gold exports were 7.5 metric tonnes in 2013, worth US\$308.8 million, grew to 10 metric tonnes in 2014, and, preliminary estimates for 2015 are that exports likely will reach 11 metric tonnes worth US\$412.9 million.

Although the potential for a much larger annual production of gold is widely considered to be high, the country has many pressing issues to manage, including:

- increasing gold resources through intensive exploration;
- establishing a consolidated database for gold mining and processing;
- improving the responsibility of gold mining entities and artisanal miners;
- enhancing the recovery rate at placer and hard rock deposits;
- processing for extraction of gold remaining in mine tailings and waste rock;
- improving environmental reclamation of mined areas; and
- optimising the legal framework for artisanal micro-mining.

The Ministry of Mining, jointly with the Mineral Resource Authority, is planning to submit a "National Gold Sector Development Program 2025" to Cabinet for approval. The paper should propose measures to address issues impeding the growth of the sector and include recommendations to manage the development of all types of gold mining (including artisanal), storing, transporting and sales regulations.

The proposed Gold Program aims to ensure long-term sector development, stability of the legal environment, intensified exploration, better efficiency and viability of the gold mining

sector through the introduction of environmentally-friendly gold mining and processing technology, improvement of Mongolia's competitiveness, and maximisation of sector benefits for the national economy. The proposed Program's wide scope encompasses gold exploration, mining, processing, sales and export, processing technology, environmental reclamation and artisanal mining.

Global price predictions from banks and financial institutions of the leading 10 countries are that the global market gold price will likely increase to US\$1155.0 per troy ounce ("oz") in 2016, followed by a slight increase in 2017, settling in the US\$1210-1230 range in the 2018-2020 period and fluctuating between US\$1250 and US\$1350 per oz from 2020 to 2025.

During the 10-year period of Gold Program implementation, investment and intensive exploration will increase gold resources and result in production of gold mined as a primary product to the range of 20 to 47.7 t annually, with an estimated total mine output of 353.2 t during the period.

Favorable factors such as policy measures to boost gold mining and sales combined with an increase in global market prices are expected to positively impact the gold sector, with sales revenues predicted to reach US\$580.8 million in 2015, US\$789.2 million in 2018, US\$853.7 in 2020 and US\$1167.7 million in 2025. In that 10-year period, gold exports are expected to fluctuate between 15.8 and 40 t per year. Gold exports are predicted to be worth US\$1177.9 million in 2020 and US\$1564.7 million in 2025. Gold exports in 2020 are predicted to be 26.7% more than in 2015 and 68.4% more in 2025.

With an increase in formal gold sales and export revenues, the country's foreign exchange reserves will grow and contribute to the stabilisation of the national currency exchange rate, further enhancing the other valuable contributions of the gold sector to economic growth. A stable legal environment for gold mining and sales will encourage further investment in exploration and mining.

Program implementation will result in a steady increase of gold and other mineral reserves containing gold, and will encourage the introduction of more advanced mining technology, reduced waste and allow better gold recovery. Opening a national gold refinery will enable direct gold sales to the international market, with more domestic production of end products, development of small and medium enterprises and more jobs.

As much investment is required to discover and develop deposits in the timeframe, there will be a pressing need for effective use of various innovative financing resources and for encouraging both foreign and domestic investment.

The supporting baseline report serves to provide the data and information required to develop an informed strategy for the 'Gold Program 2025'. **The next step is for the Government of Mongolia to develop an action plan to guide implementation based on these strategic recommendations.**

The following issues are identified as key considerations for the Gold Sector Program 2025:

Stabilisation the legal, tax and investment environments for the gold sector

To boost gold exploration and increase gold mining, the current legal and tax environments for gold businesses should be kept stable.

Intensification of the mining of hard rock gold and gold bearing metal deposits over exhausted alluvial gold deposits reserves

Gold-bearing metal deposits account for 90% of Mongolia's total discovered reserves. There is a need to take efficient measures to develop these deposits in the coming 10 years

Consideration of a national gold refinery, smelter and refinery to process gold bearing metal deposits

Annually, Mongolia produces over 20 metric tonnes of gold which is justification for the consideration of national gold refinery establishment.

Develop a consolidated database for gold mining, production and sales.

There is a need to improve activity coordination of government stakeholders engaged in gold mining and sales and to develop a consolidated database to guarantee increased transparency.

Increased recovery rate for placer gold deposits and reduce wastes and tailing dumps

Carry out technical audits of companies using gold washing and processing technology, with the objective of increasing in gold recovery.

Re-processing of gold wastes and gold tailings

There is need to study and apply advanced technology to re-process gold dumps and tailings from the mining operations of placer and hard rock gold deposits.

Improvement of the legal environment of artisanal gold mining and gold sales

Despite efforts to formalise the artisanal sector and to build the capacity of cooperatives of artisanal miners, there is much more work to be done in this area.

Strategy Goal and Objectives

Strategy Goal: The strategy aims to increase gold production; to boost efficiency and viability; to encourage environmentally-friendly gold mining and processing technology; to increase Mongolia's gold sector competitiveness; to maximise the gold sector's contribution to the national economy by ensuring medium- and long-term development of Mongolia's gold sector; to stabilise the legal and tax environment; to intensify exploration; and to commence operations at hard rock deposits.

Strategy Objectives:

1. Increase gold sector investment by creating a more favorable environment and framework for mining, exploration, processing and sales, and improve the overall legal environment.
2. Steadily increase identified gold deposits/reserves with proper encouragement; identify regulations and sequences for exploitation of hard rock and poly-mineral deposits containing gold; and intensify mining and processing of these deposits.
3. Improve gold mining and processing technology and value-added production.
4. Introduce strict requirements to govern the use of tailings and reclamation of mined areas.
5. Improve the regulation of artisanal mining and sales.

Principles of Strategy Implementation

1. Ensure alignment with the State Mineral Policy, the Government's medium-term strategic plans for the sector, and the State Mineral Law.
2. Encourage modern and advanced gold mining and processing technology that impacts minimally on human health and the environment.
3. Ensure alignment with international gold supply and demand trends
4. Encourage cooperation between the government, the companies and the artisanal miners in the gold sector.

Strategy Scope

- Gold exploration and mining.
- Processing and technology.
- Sales and export.
- Environmental protection and reclamation.
- Artisanal mining.

Strategic Action Plan

1. Improve investment environment

- Revise and develop regulations for gold containing ores and sands specific to processing and washing, storing, safeguarding, transporting and selling;
- Review the current taxation regime governing the sector;
- Better enforcement of the Law prohibiting mineral exploration and mining at Headwaters of Rivers, Protection Zones of River Basins and Forest Areas;
- Set minimum requirements for gold recovery and specify required gold mining and processing technology; develop respective rules and regulations and enforcement.
- Develop and ensure compliance with a detailed plan on reclamation of disturbed mine areas and conduct monitoring;

- Develop regulation on planned reclamation of mined land and the part or whole handover of mined land to/by local authorities and relevant government agencies;
- Encourage value added production and processing of by-products from copper and gold concentrates through taxation and investment policies;
- Create a consolidated database for gold mining and sales; improve integration of activities and cooperation between government ministries and agencies in the gold sector;
- Optimise forecasting of gold demand and supply, medium-term price predictions; improve gold export and government revenue planning;
- Provide financial support to national small-scale gold mining companies, arrange credits to increase gold production capacity provided that the credit is repaid from gold purchase;
- Awareness-raising and training on international best practice for responsible gold mining, gold sector's economic benefits, its contribution to a local economy; and
- Study possibilities for town planning, upgrade of infrastructure facilities such as road, electricity and water.

2. Increase gold reserves; identifying optimal mining stages and development of hard rock deposits and gold bearing metal deposits and intensify mining and processing of these deposits

- Strengthen licensing system for gold exploration, clarify the conditions for license holders as set by the local administration;
- Develop and implement a plan for mapping and exploration of potential gold fields;
- Evaluate reserves of old and newly-registered gold deposits, amend feasibility studies and prepare for future development;
- Carry out gold geological mapping in the southern border area and specially-protected areas and evaluate identified reserves in these areas;
- Introduce modern mapping and exploration technologies; upgrade methodology and requirements for exploration;
- Evaluate estimated gold reserves in line with international reserves classification;
- Identify project stages to be implemented in hard rock gold and gold bearing metal deposits, using criteria of availability of technical solutions, investment sources, readiness of infrastructure, and supply of human resources and qualified personnel; develop and implement detailed plans with timelines for relevant deposit development;
- Support preparations for developing the strategically important Gatsuurt gold mine in 2016 and the Oyutolgoi underground copper-gold mine in 2020;
- Explore the possibility for commercial operation and evaluate the reserves of the Tavn, Bumbat and Olon Ovoot gold deposits, which have been on hold for several years without commercial operations; implement action for future mining.
- Carry out economic viability evaluations on low-grade gold deposits which are formally registered, and investigate the potential for further exploitation.

3. Improve gold mining and processing technology and increase gold value-added production and services

- Develop and apply technology standards for gold mining and processing;
- Support mainstreaming of advanced and environmentally-friendly technology and equipment for placer and hard rock gold deposits; improve safety control systems;
- Strengthen the Assay control agency under the Mongolian Agency for Standardization and Metrology; optimise gold sales recording systems and establish assay laboratory in rural gold mining areas;
- Establish a national gold refinery for gold processing and value added products.

4. More efficient use of gold wastes and gold tailings and regulation of reclamation of mined areas

- Register all gold dumps and tailings from former placer and hard rock deposits and estimate existing reserves;
- Develop and implement a detailed mining and processing plan for gold dumps and tailings;
- Encourage and expand involvement of artisanal mining co-operatives for the treatment of gold dumps and tailings and introduce efficient low-waste technology;
- Conduct a detailed environmental impact assessment for mining gold dumps and tailings, identify negative impact, and conduct technical audits of dumps and tailings planned for future use;
- Carry out census of damaged land at gold dumps and tailings processed areas and; conduct detailed topographical mapping, get reclaimed by guilty persons, and increase requirements and sanctions regarding reclamation

5. Improve regulation on artisanal mining and gold sales

- Include measures such as equipment standards for artisanal mining and regulate a formal network for buying gold from artisanal miners;
- Develop and implement regulations on gold purchase, storage, transport and assaying of gold from artisanal mines;
- Encourage artisanal miners to establish formal companies;
- Register local gold traders;
- Establish a gold assay laboratory in potential gold mining areas;
- Facilitate the sale of gold to rural branches of Mongolbank or other commercial banks;
- Create a consolidated database on gold mining and sales, global gold market prices and Mongolbank monthly prices; make the database available to gold miners and traders.

Implementation Timeline

The program will be implemented in three phases, as below.

- **Phase One** (2015-2017): development of an implementation action plan, legal, taxation and investment policy support.
- **Phase Two** (2018-2020): introduce advanced gold mining and processing technologies and ensure stable development of gold production.

- **Phase Three (2021-2025):** increase exports and government revenue by upgrading gold processing and producing new value-added products.

Strategy Management and Monitoring

1. A Gold strategy Working group under direction of the Minister of Mines to be assigned to implement, coordinate, monitor and report on the strategy;
2. The Ministry of Mines shall submit an annual report on strategy implementation to the Cabinet in the first quarter of each year.

Expected Outcomes and Criteria

By 2025, the following outcomes will be achieved as a result of the strategy implementation:

- Increased investment in gold exploration, production and sales by creation of a stable legal environment for the gold sector, its exploration, sales and production.
- Improved reserve evaluation and registration of hard rock deposits and tailings deposits and a steady increase of proven reserves. During strategy implementation gold exploration is predicted to accelerate and reserves to increase by 400-570 t.
- As a result of a steady increase of proven gold reserves, annual production will rise to 20-47.7 t, with 353.2 t of gold produced during the 2015-2025 period.
- Introduction of advanced gold mining and processing technology; reduced waste ore/dumps and reclamation of gold mining areas meeting standard requirements.
- Compared to 2015, gold sector export revenue will increase 26.7% in 2020 and 68.4% in 2025.
- A new refinery will enable gold to be directly exported to the international market.
- Establishing a copper smelter and processing factory will enable domestic production (SME) of gold, silver and products made of precious metals.
- Steady increase of gold sales to the MongolBank, with higher foreign currency reserves resulting in a more stable national currency rate and improvement of creditworthiness and re-payment capacity.
- Artisanal miners are formalised and an optimal taxation system introduced, with an increased benefit for the national and local economy.