123 4

2016

-53.6

Hishikari Mine's operations continued according

to plan so sales of gold were 6 tons, as planned

sales volume were below targets, a result partially

production volume and copper sales volume due to

attributable to a decline in the grade of gold ore. The Morenci Copper Mine enjoyed increases in

such factors as additional acquired interests

-44.3

Segment profit

Hiroshi Asahi

Executive Officer.

General Manager of

Mineral Resources Div.

Pogo Gold Mine production volume and gold

Net sales

113.8

(¥ billions)

Learn about SMM

Value Creation

**Review of Operations** 

SMM uses the technology accumulated from operating Besshi Copper Mine (opened in 1691) and incorporates it in operations of Hishikari Mine (opened in 1985) and Pogo Gold Mine (opened in 2006). Additionally, SMM acts as a professional mine developer and operator seeking out superior resources in regions around the world, while participating in mining operations, pursuing myriad exploration projects, and proceeding with surveys to develop new mines.

## Business environment and priority measures for the 2015 3-Year Business Plan

Prices of non-ferrous metals in FY2016 saw gold go up as concerns over economic slowdown in China pushed copper prices down. Although the market for non-ferrous metals is unlikely to rise significantly in the near term, we predict a recovery over the medium- to long-term as supply and demand improves. Meanwhile, conditions grow more strained for the environment surrounding resource development due to rising mine development costs and growing resource nationalism, among other factors. SMM is focusing on efforts that include strengthening exploration, mineral processing and other technologies while also strengthening partnerships with nations

In our mineral resources business, we are promoting fullscale production at the Sierra Gorda Copper Mine and the acquisition of new gold interests as priority measures of our 15 3-Yr Business Plan.

### FY2016 initiatives

and local communities

Hishikari Mine operations proceeded according to plan. At the Pogo Gold Mine, a decline in the grade of gold ore contributed to production volume and sales underperforming initial targets. Concerning Morenci Copper Mine operations, figures were roughly on a par with the previous period. However, since boosting our stake in the mine has given us a 25% interest, the production and sales volumes reflected in our results has increased.

At the Sierra Gorda Copper Mine, where both operations and performance are low, efforts were made to achieve stable operation and improve efficiency. The result was processing volume at a level close to full-scale operations in the second half of FY2016, and full year copper production volume at 94,000 tons. With a view to acquiring new interests in gold, which is deviating from the targets set forth in the Long-Term Vision, we established a team dedicated to discovering and evaluating gold development opportunities in August 2016. The team is now actively engaged primarily in Canada, Australia, and South America.

The mineral resources segment's net sales were ¥123.4 billion (up 3% compared to FY2015) due to the acquisition of additional interests. Losses totaled ¥53.6 billion, the result of an ¥80.1 billion impairment loss recorded for the Sierra Gorda Copper Mine and a decline in copper prices, among other factors.

## FY2017 priority measures and the outlook going forward

Regarding the Sierra Gorda Copper Mine, providing technical support together with our partners, like dispatching SMM engineers, will be among the ongoing efforts aimed at improving efficiency and achieving stable operations. We are also focused on making improvements with respect to molybdenum, for which operations have been in a slump, and expect to nearly meet the planned production in the second half of FY2017. Regarding copper, plans call for an annual production volume of 100,000 tons.

With regard to acquiring further gold interests, we have signed a contract to acquire a 27.75% stake in the Côté Gold Project in Canada. The project is currently at the pre-feasibility study stage, with operations expected to begin in FY2021. As for gold mines, we will focus on our own exploration while we continue to actively pursue the acquisition of new interests.

With respect to FY2017 segment performance, we are expecting net sales of ¥147.0 billion (up 19% compared to FY2016) and profits of ¥49.0 billion due to rising copper prices and decreasing losses at the Sierra Gorda Copper Mine, among other factors.

# Depreciation \_\_\_\_ 100.000 92,012 80.000 60.000 40 000 20,126 \_\_18,044\_\_15,230 16,095 20,000 -

Capital expenditure / depreciation

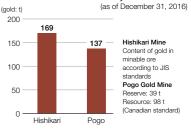
Included in FY2016 capital expenditures is an increase in tangible fixed assets and other assets resulting from acquisition of an additional 13% interest in the Morenci Copper Mine.

2015

2016 (FY)

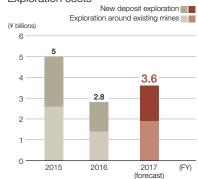
## SMM's metal interests by mine

2014



Metal reserves by mine, calculated as of December 31, 2016, are 169 tons (almost no change from last fiscal year) at Hishikari Mine and 137 tons (down 8 tons from last fiscal year) at Pogo Gold Mine.

### **Exploration costs**



In 2017, we will proceed with exploration focused on gold and will dedicate further effort to exploration around mines already in operation.

# 2014 2015 2016 2017 (FY) Losses amounted to ¥53.6 billion owing to, among other factors, an impairment loss at the Sierra Gorda Copper Mine and a drop in copper prices continuing on from the previous year

## Aiming to acquire gold interests **Topic** with a new dedicated Business **Development Team**

One of the targets laid out in SMM's Long-Term Vision is achieving a 30-ton annual gold production interest in 2021, for which end we are now exploring and acquiring interests around the world. In the interest of speeding up these efforts, we established the Business Development Team under the Exploration & Development Department of the Mineral Resources Division in August 2016 (the team became the Business Development Department in July 2017).

Dedicated solely to the acquisition of gold interests, the team comprises four experts from fields such as mining, exploration, and accounting. The team targets primarily mines currently being developed or those around the feasibility study\* stage, and is

conducting surveys and issuing proposals with a view to M&A as well as joint development. Focusing on a number of aspects that include gold reserves, mining conditions, and country risk, the team analyzes information collected from investment firms and various other sources. The team has examined 20 projects over the eight months since its formation, and is now identifying those with the most promise.

As a result of these efforts, on June 6, 2017 SMM publicly announced its participation in the Côté Gold Project (in which Canada-based IAMGOLD Corporation holds a 92.5% interest) and acquisition of a 30% interest (27.75% in the overall project). We will continue to actively pursue acquisition of gold interests in order to achieve our goals.

\* Feasibility study: Preliminary survey to evaluate project feasibility from a number of perspectives.



Receiving an explanation of the project from IAMGOLD at the top of the Cote Gold Mine pit

Learn about SMM Value Creation **Review of Operations** Mineral Resources Business

# Strengths of the mineral resources business and activities that support growth potential



## Strength 1 Accumulated mining and exploration technology

Along with utilizing the Hishikari Mine as a site for nurturing mining engineers, SMM also dispatches engineers to other mines in which we hold an interest, fostering human resources with expertise in and knowledge of mine exploration, development, and operation.



Strength 2 Robust relationships of trust with our partners

In preserving our mine interests, SMM goes beyond mere investment; we dispatch employees and form cooperative technology relationships, which allows us to earn a high degree of trust from our partners.



Strength (3) Co-existing with local communities

While carrying out dialogue with stakeholders, we listen to the needs and concerns of local communities, striving for responsible environmental management and developing and operating mines in harmony with these groups.

# Strength 4 High-precision techniques for evaluating profitability

When acquiring mine interests, leveraging the vast amounts of mine-related information concerning reserves, investment amounts, risk, and other aspects that we have accumulated over many years allows us to conduct highly-accurate profitability evaluations.

Implementing tailings dam stabilization measures for closed and suspended mines in Japan with a view to sustainable mine management and operation

## Preventing damage to the environment in the event of earthquakes or other disasters

Operating mines sustainably requires a variety of efforts to minimize the impact on the environment. One of these is managing the accumulation sites for the spoil, slag and deposits produced by mines.

Recent years have seen a series of slag accumulation site ("tailings dams") collapses at mines in Canada and Brazil. In response, the ICMM<sup>1</sup>, whose membership comprises the world's largest mining companies, formulated a new basic policy on tailings dam management in December 2016. In Japan, too, the Great East Japan Earthquake caused tailings dam accretion leakages at mines no longer in operation, affecting rivers, railways, and farmland. In preparation for large-scale earthquakes that could occur in the future, the Ministry of Economy, Trade and Industry revised its Technology Policy in 2012. Under the new technical guidelines, facilities for which "special conditions"<sup>2</sup> apply, stability evaluations for large-scale seismic vibration3 must be conducted

- International Council on Mining and Metals
  (1) Inner-aggregation slime storage areas filled higher than the base embankment; (2) accumulation sites that are saturated or where the permeation level is within 10 m of the accumulation surface (excluding cases where the permeation level or saturated portion is below the dam crest of the base embankment) (3) accumulation sites with accumulations of 50,000 m³ or more (including even those below 50,000 m³ if there are important structures immediately below and or damage could result
- The highest level of seismic vibrations conceivable at the time of installation



## Undertaking stabilization work at five facilities nationwide

As a member of the ICMM, SMM is responding to this development by undertaking stabilization work for tailings dams in 56 locations nationwide that are managed by the SMM Group. Of the 10 locations to which the "special conditions" in the Ministry of Economy, Trade and Industry's new technical guidelines apply, measures have been deemed necessary for a total of five facilities at the Okuchi (Kagoshima, closed in 1977) and Konomai (Hokkaido, closed in 1973) mines. Roughly ¥4.5 billion was spent on stabilization work at these mines from FY2014 to FY2015.

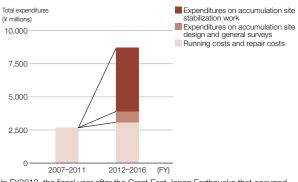
At slag accumulation site no. 2 at the Okuchi Mine, ground improvement was used to prevent the liquefaction of accretions. During site stabilization, we established provisional water treatment facilities that treated the turbid water produced in the course of the work and endeavored to achieve a mutual understanding with members of the community through efforts that included holding briefings about and tours of the work being done. In addition. Konomai Mine facilities were reinforced by ground improvement and remedial filling for dams vulnerable to liquefaction, with stabilization work being carried out based on considerations of the characteristics of the various facilities.

Even for tailings dams to which "special conditions" do not apply, seismic resistance is being reevaluated for midscale seismic vibrations based on the previous technical guidelines. Stabilization work is being performed in turn for each of the

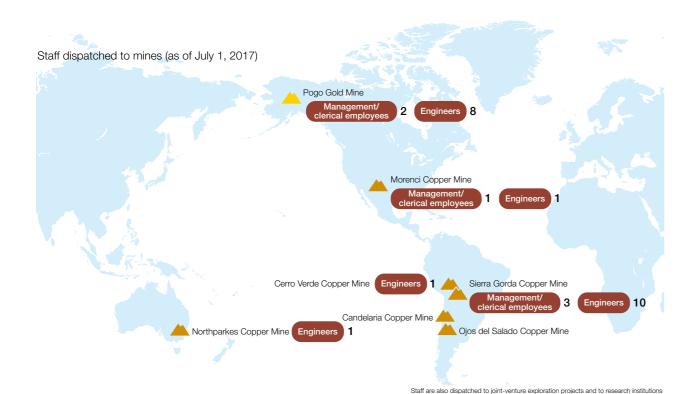


six locations that were determined to be insufficient. The SMM Group continues initiatives to minimize the environmental impact of discontinued mines, as well, promoting safety management.

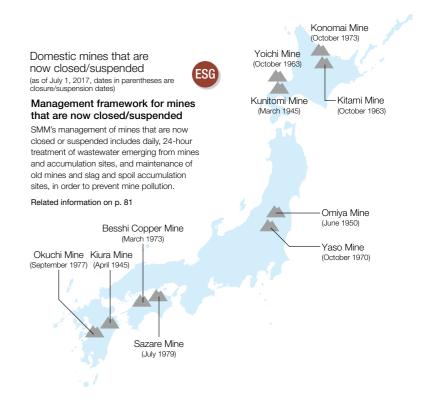
## Expenditures for closed/suspended mines, 5 years before/after the Great East Japan Earthquake



In FY2012, the fiscal year after the Great Fast Japan Farthquake that occurred on March 11, 2011, SMM began conducting surveys to evaluate the seismic resistance of tailings dams. For tailings dams that required improvement. stabilization work was concentrated in FY2014 and FY2015.



Copper mines in which SMM has ownership Copper mine name SMM interest Morenci Cerro Verde Sierra Gorda Candelaria 16.09 Ojos del Salado 16.0% Northparkes 13.3% Total copper interests: breakdown by mine Candelaria. Northparkes Ojos del Salado Total 8.6% Sierra Gorda Cerro Verde



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