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## Bluebird Merchant Ventures

19<sup>th</sup> May 2020

### Potentially industry leading gold producer in South Korea now on the cusp of a 50,000oz pa net to Bluebird production profile

Bluebird Merchant Ventures is a South Korea-focused resources company which is bringing old gold mines back to life. It is far quicker and cheaper to rehabilitate old gold mines than fund exploration, mines where production was curtailed a couple of decades ago due to a low gold price (under US\$140/oz). Recently, Bluebird gained a binding agreement for a US\$5M gold streaming style deal to fund reopening its gold mines.

#### Gold production set to begin in Q1 2021 with low costs of US\$576/oz

Bluebird is expected to commence gold production in 2021 with a swift trajectory to 100,000oz pa (50,000oz pa net to BMV) by 2026. At attractively low operating costs of US\$576/oz, this could be a big money spinner. All this in a country which has a highly pro-mining government.

#### Fantastic timing as gold is forecast to hit US\$3,000 in 18 months

There could be no better time to be a junior about to commence gold mining as experts reckon that the looming recession will be the deepest peak to trough decline in recent memory. Bank of America has recently published a report saying that gold could surge to this all-time high by the end of 2021 due to record bank balance sheets/government fiscal deficits.

#### Proven model to smartly move the project up the valuation curve

Colin Patterson (CEO) and Charles Barclay (COO) have developed a cracking business model. In 2010, the Apex Mine (Philippines) was acquired for \$7m, reinvigorated by the team and 2 years later received an offer for \$180m from a major. Bluebird bears all the hallmarks of being Apex Mark II.

#### 50% Risked NPV at a 12% discount rate suggests upside of over 200%

We believe our NPV valuation is very conservative and initiate coverage of Bluebird with a target price of 12.63p and a **Conviction Buy** stance.

Table: Financial overview

Year to end Dec	2020E <sup>1</sup>	2021E	2022E	2023E
Revenue (US\$'000)	-	5,950	12,750	22,950
PTP (US\$'000)	(1,950)	2,730	7,230	13,110
EPS (cents)	(0.52)	0.69	1.83	3.22

Source: Company accounts & Align Research

<sup>1</sup> 18 month period

*This investment may not be suitable for your personal circumstances. If you are in any doubt as to its suitability you should seek professional advice. This note does not constitute advice and your capital is at risk. This is a marketing communication and cannot be considered independent research.*

### CONVICTION BUY – 1<sup>st</sup> price target - 12.63p



#### Key data

EPIC	BMV
Share price	3.95p
52 week high/low	4.40p – 0.90p
Listing	LSE
Shares in issue	371.0m
Market Cap	£14.6m
Sector	Mining

#### 12 month share price chart



#### Analyst details

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## Business overview

### Bluebird Merchant Ventures Operations

Bluebird Merchant Ventures (Bluebird) is focused on re-opening old gold mines in South Korea in a joint venture with its partner Southern Gold (ASX:SAU). The company is currently involved with the re-opening of the following narrow vein gold underground mines:

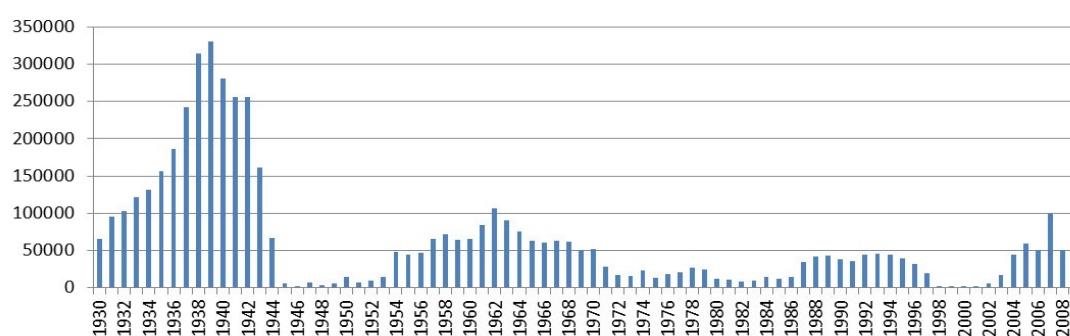
- **Gubong** – In the past, Gubong was the second largest gold producer in South Korea. **This grand old mine is seen as having a substantial amount of remnant ore lying between mined blocks which could provide excellent exploration potential.** Gold production between 1926 and 1971 is recorded as 434,291 ounces but the 120 kilometres of development drives would suggest that more like 5 million ounces of gold has been mined. Mine data indicates good potential from re-establishing production at the mine, as well as early cash flow.

- **Kochang** – There are two separate mines - Kochang Gold Mine and Kochang Silver Mine. Mining ceased in 1975 and incomplete production records revealed that a total of 88,023 ounces of gold was mined, but probably the total was highly understated. **Exploration work previously carried out by Southern Gold has now defined gold mineralisation extending over a 2.5-kilometre strike which joins the two mines.**

### Gold mining in South Korea

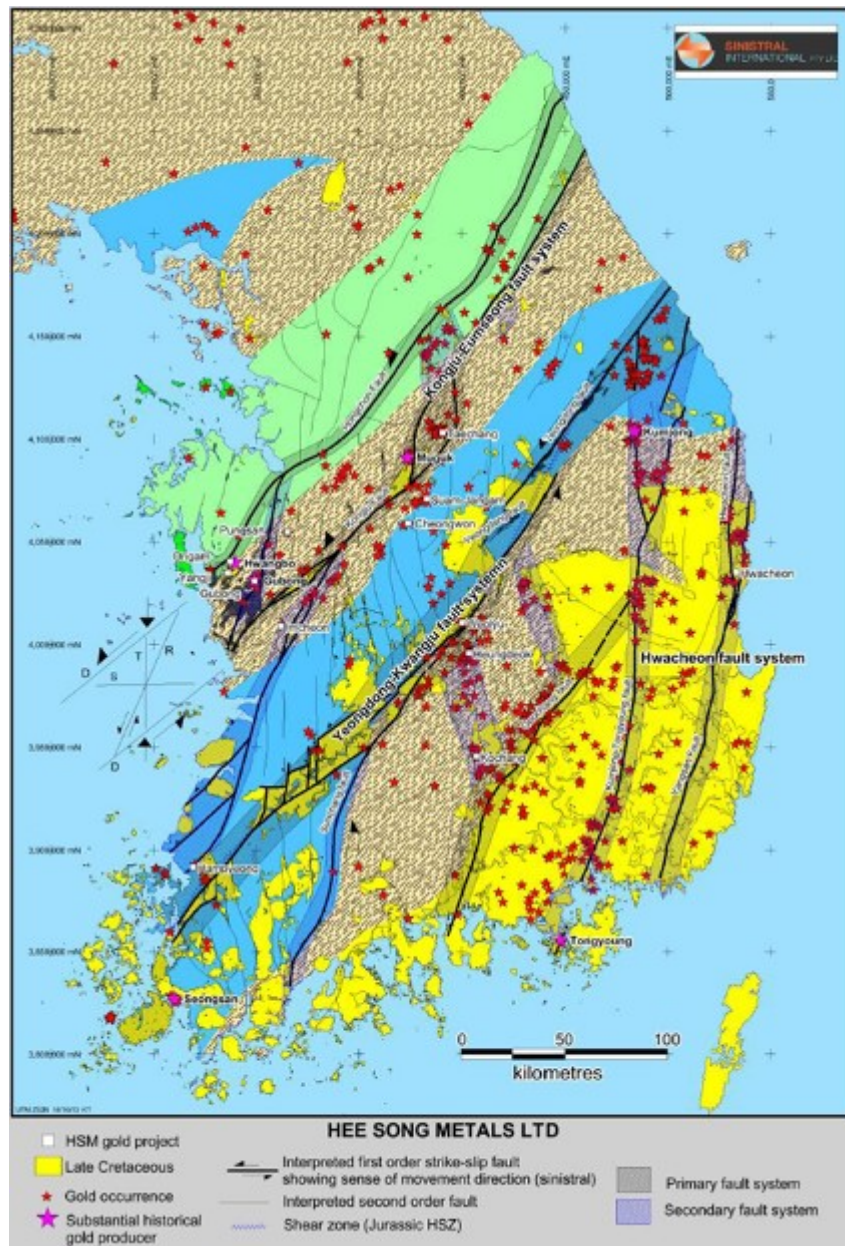
South Korea occupies the southern half of the Korean Peninsula. The country covers an area of around 100,000km<sup>2</sup> and so is roughly about the same size as England. South Korea has a population of 51 million, with 10 million people living in the capital Seoul, which is the largest city. The country is a global leader in the industrial and technological sectors and is the world's fifth largest exporter.

Innovation and technology have fuelled the country's remarkable rise from being one of the poorest countries in the 1960s, to now having the 11<sup>th</sup> largest economy in the world. However, South Korea has a long history of gold mining, with around 5 million ounces (Moz) produced between 1928 and 2008. After the First Sino-Japanese War and the Russo-Japanese War, Korea was occupied by Japan from 1910 to 1945, and the majority of this historic gold production was by Japanese companies in the 1928 – 1943 period.



Gold production in South Korea (ounces). Source: Company

South Korea's natural resources include coal, graphite, molybdenum, tungsten and lead but mining is not a primary contributor to the country's economy. In all, there is thought to be 1,400 old mines in South Korea which includes a substantial number of historic gold mines. Further, there have been numerous gold occurrences (see the red dots on the map on the next page) and some of these might have been mined. Many small to medium sized mines closed during the mid-1980s and there has been little exploration since the late 1990s.



Gold projects in South Korea and the major lithological units. Source: CPR January 2018

Recent history shows few international companies being involved in gold mining in South Korea. However, in the 1990s, Doug Kirwin, Bluebird’s former Senior Technical Advisor, was responsible for three gold discoveries in South Korea which **Ivanhoe Mines (TVX:IVN)** subsequently put into production. More recently, in July 2016, Southern Gold acquired a number of gold projects across a series of tenements in South Korea. Amongst these were six high priority targets, where there were plans to drill four of these quite quickly.

**The government in South Korea is highly supportive of the mining industry, with the country charging no mining royalty, plus there are other incentives.** The first drilling by Bluebird’s partner Southern Gold at Kochang, was supported by the government-backed Korean Resources Corporation (KORES), which agreed to fund 70% of the direct drilling costs. South Korea was well recognised as a substantial gold producer in the past, but this profile has been reduced over recent decades. Southern Gold sees the country as a “time capsule” gold industry that was once substantial but has only recent been rediscovered.



## Background

Bluebird Merchant Ventures Ltd was incorporated in March 2014. The shares were admitted to trading on the London Stock Exchange by way of a Standard Listing in April 2016.

March 2017 saw the company enter an agreement to form a joint venture with ASX-listed Southern Gold to re-open gold mines in South Korea. Southern Gold had acquired a number of tenements within South Korea, some of which contain historic gold mines. Southern Gold is an explorer and project generator with a business model of farming out production to professional mining operators. Bluebird finally selected the Kochang and Gubong mines with a plan of entering 50:50 joint venture upon completion of a feasibility report on each mine. **With agreed expenditure of US\$1M now completed on the projects and submission of feasibility reports, the Joint Ventures were duly formed.**

Bluebird secured the opportunity for the South Korean mines from Momentum Resources (MR), which had been engaged with in a number of similar projects in SE Asia over the past decade. Following these moves, Colin Patterson and Charles Barclay, who between them own a 25% stake in MR, joined the board as CEO and COO respectively. The MR team is an East Asia-based group of professional mine operators with substantial experience in all aspects of mining.

**Permit approval was received for both Gubong and Kochang in late 2019, and at the time the company highlighted that these two mines provided the opportunity to advance into production and then grow in a substantially organic growth from 10,000oz pa to 30,000oz pa over a three year period.** In March 2020, the board was able to announce that Bluebird had entered into a legally binding agreement with a South Korean company which provides a path to US\$5 million of non-dilutive debt funding which would finance the joint venture's move into gold production in South Korea and be a real accelerator of development for the company.



*Kochang. Source: Southern Gold*

## Operations

Bluebird is focused on bringing old gold mines back to life in South Korea. At present the company has well developed plans to bring two historic gold mines into production: Gubong and Kochang. These old mines are all on tenements that are jointly owned by Bluebird and its partner Southern Gold and all have been granted Mining Rights under the Korean mining law. **No government royalties or exercise tax are payable in South Korea.**



Location of Southern Gold Projects in Korea. Source: CPR January 2018

Project	Area hectares	Blocks	Location
Gubong	2,484	9 contiguous blocks of 276 hectares	Chungnam Province
Kochang	837	3 contiguous blocks of 279 hectares	Gyoungnam Province

Two gold mines that Bluebird plans to bring back into production. Source: Company

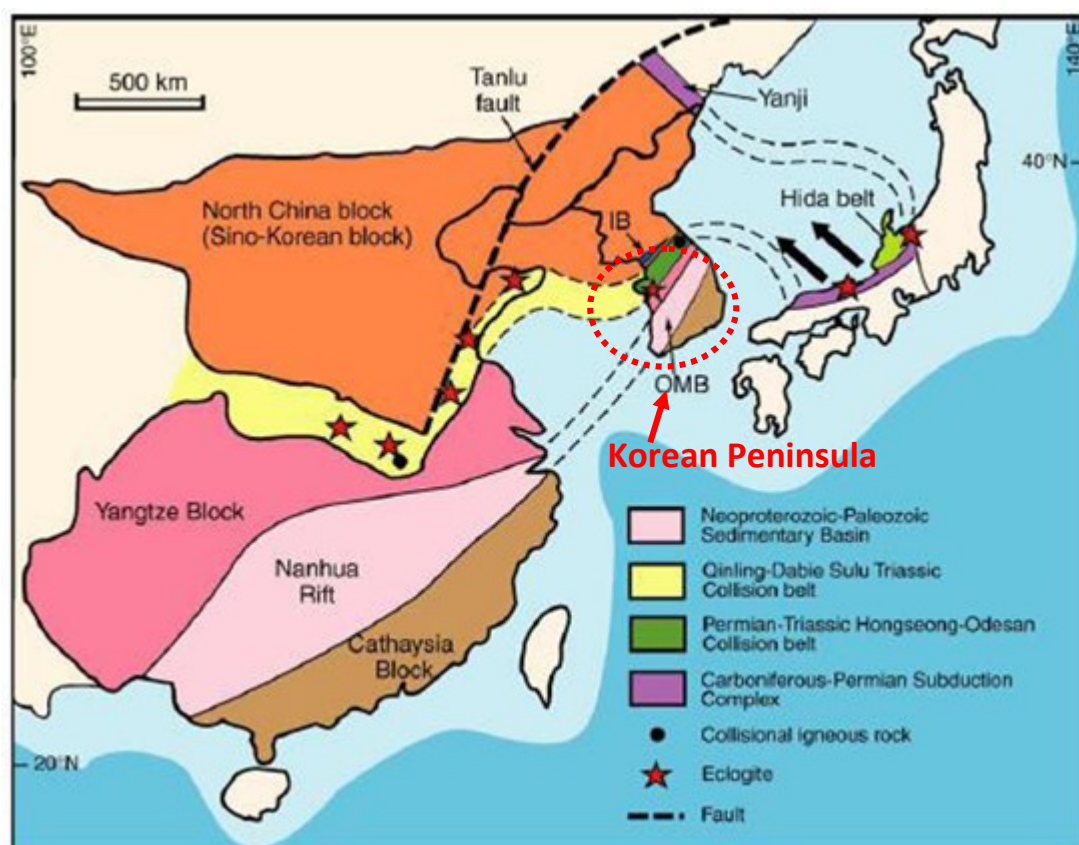
## Geology

The topography of South Korea consists mainly of hills and mountains but there are large coastal plains in the western and southern parts of the country. The highest point in South Korea is Hallasan, an extinct volcano which rises to a height of 6,398 feet.

Korea sits on the Pacific Rim and has affinities to the gold producing belts in China and Japan. In terms of geological time, Korea lies between the China and Japan subduction zone within the 'ring of fire' geology. This relates to plate tectonics and the enormous geological forces that are unleashed when tectonic plates collide.

A subduction zone represents an oceanic trench area at the margins of a continent where older and denser seafloor disappear underneath the continent as this plate is dragged downwards into the earth's upper mantle. These suprasubduction environments, which are the crust above the subduction zone, are one of the major sources of the world's gold.

Limited systematic modern exploration has been undertaken in the Korean Peninsula in comparison to similar belts of rocks to the north-east (i.e. parts of Japan and Russia) as well as to the south-west (China) that are both known to host numerous significant gold deposits.



Major lithologic units in East Asia. Source: CPR Report January 2018

Joint venture partner Southern Gold believes that this geology means that South Korea hosts some of the best plumbing systems in the world when looking for the emplacement of precious metal deposits. Its technical team believes that South Korea is ripe for modern-style gold exploration and discovery.

Gubong is orogenic in nature which means that they were formed during plate tectonics at the time when mountains were built. Geologists believe that they were formed as parallel sets of structurally hosted gold and silver bearing quartz-calcite veins in metamorphosed terranes at a depth of 1.2 – 4 kilometres. These sorts of deposits are likely to have been formed either by magmatic fluids at a depth from within granitic intrusions or from metamorphic fluids which were heated during the metamorphism process, which have served to transfer and concentrate metals from country rock into veins.

Kochang differs in that it is an epithermal deposit occurring in a metamorphic setting. However, these two mines have similar physical characteristics as they all occur within metamorphic rocks. Both Gubong and Kochang consist of high-grade quartz veins which have developed in narrow structurally controlled fissures or shears in numerous stacked veins. Also, at both these mines, past gold production activity has been concentrated on just one or a few of these veins which in those days were of economic value.

### **Gubong**

In the past, Gubong was the second largest gold producer in South Korea. This old mine is seen as having a substantial amount of remnant ore that lies between previously mined blocks and provides excellent exploration potential. **Mine data indicates good potential from re-establishing production at the mine as well as the prospect of early cash flow.** The mine lies 130 kilometres south of Seoul and is 10 kilometres from the nearest city of Cheongyang. The mine operated over three periods: 1911-39, 1946–50 and 1952-71.



*Old photograph of Gubong. Source: Company*

Gubong's orogenic gold mineralisation consists of quartz veins formed with schists and gneisses of Pre-Cambrian Age with the veins lying in an NNE corridor. These veins show a gold:silver ratio of 1:1 to 4:1 and form milk white quartz veins with a narrow band of sulphides, with the highest-grade gold mineralisation seen near the margins. There are nine stacked known veins plus the Danbong, Bongman and Gunryong veins. Just a few of these veins were mined, but other veins in this system are now seen as being economic.

Recorded gold production consists of 434,291 ounces mined during 1926-71, plus 109,307 ounces of silver. However, these figures are thought to have been understated as there was little control over the mining carried out by Japanese companies. The MR team believes that the 120 kilometres of development drives would probably suggest that a total of more like 5 million ounces of gold have been mined in the past.



## Historical drilling results

Historical exploration drilling results from a total 57 holes for a total of 17,715m have been examined by the team whilst involved in its detailed planning. This drilling was carried out over various periods from 1968 to 2015 and mostly by KORES. The downhole depths of these drill holes varied from 9m to 950m, with an average depth of around 320m. In all, 18 drill holes contained significant intersections greater than 1g/t Au. These highly encouraging results, shown below, indicate the continuation of the gold system to depth and are a further pointer to the size of the gold field.

Hole ID	From (m)	To (m)	Width (m)	Gold (g/t)	Silver (g/t)
89-12	100.1	100.3	0.2	9.8	22.0
89-12	110.7	114.7	4.0	1.4	2.0
89-13	117.1	117.7	0.6	19.0	49.0
89-15	53.2	53.6	0.4	1.8	1.0
89-15	104.3	108.8	4.5	2.4	39.0
89-16	210.8	211.2	0.4	3.7	-
89-18	123.3	124.6	1.3	1.4	369.0
89-20	186.6	186.8	0.2	2.5	2.0
89-6	188.7	189.1	0.4	17.3	6.0
90-10	109.8	110.4	0.6	62.3	26.0
90-10	149.0	149.2	0.2	95.9	35.0
90-10	196.0	196.3	0.3	5.0	2.0
90-12	840.0	841.0	1.0	1.1	4.0
90-12	845.2	846.8	1.6	27.9	25.0
90-3	340.0	340.6	0.6	29.0	15.0
90-4	138.5	138.8	0.3	7.3	8.0
90-5	90.0	90.2	0.2	3.5	-
90-5	110.9	111.8	0.9	8.4	25.0
90-5	190.5	190.7	0.2	32.0	1.0
90-6	125.8	126.1	0.3	5.5	-
90-7	87.8	88.1	0.3	34.1	12.0
90-8	146.0	146.3	0.3	522.2	81.0
90-8	277.9	278.1	0.2	72.4	40.0
90-9	275.3	279.0	3.7	3.2	5.0
90-9	347.2	348.7	1.5	4.9	-
91-5	441.8	444.8	3.0	15.2	6.0
GBDD004 <sup>1</sup>	143.55	145.00	1.45	1.99	-

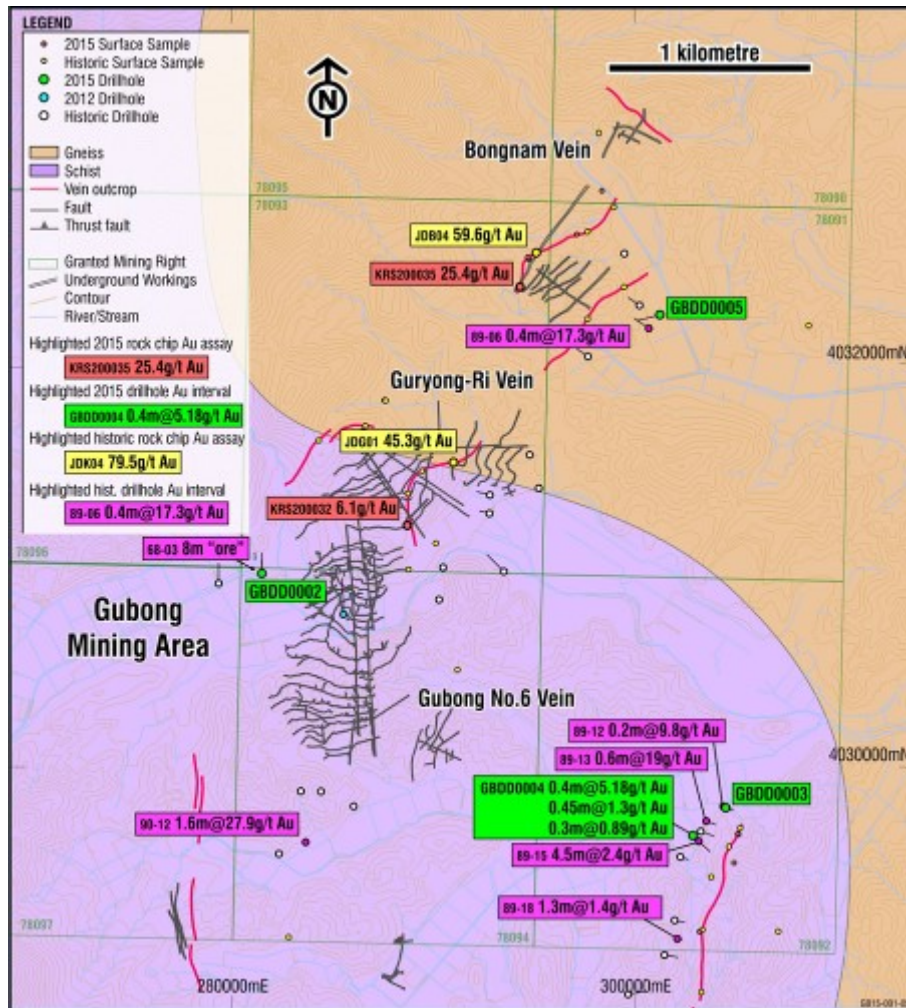
<sup>1</sup> - including 0.4m at 5.18g/t gold

*Significant intersections >1g/t gold found in historical drilling results. Source: Company*

## Resources & Mining

The Korean Resources Corporation (KORES) estimates that the remaining resource at Gubong is 2.34Mt at 7.36g/t, which equates to 555,229 ounces of gold. This however does not represent a JORC-compliant resource.

Past mining at Gubong exploited six high grade quartz veins called No. 1 to No. 6 which lay within schist and gneiss and extended over an area of 14km<sup>2</sup>. No. 6 was the most extensively worked vein that was mined down dip for around 1,000 metres, which corresponds to a vertical depth of 550 metres below the surface. Previous exploration includes the drilling in 2004, which saw two deep drill holes (750 and 820 metres) drilled by KORES, which concluded that the No. 6 vein continued at depth.



*Gubong – drill holes and significant assays. Source: CPR January 2018*

International Gold Limited undertook an Economic Evaluation Study (EES) on the Gubong deposits in 2011. It was based on the design, mining and development of a 0.5Mtpa gold mine and mill. The authors considered that the historic resource could be upgraded to JORC using 2007 core and further drilling. They also highlighted a number of satellite deposits which included: Imcheon, Pungsan, Ongam and Yangi where KORES has a calculated a total of an additional 300,000 ounces of gold.

EES estimated a total of 2.7Mt of ore at an average grade of 7.0g/t and with more than 575,000 ounces recovered. **Based on the likely prevailing AUD/USD FX rate at the time, a gold price of US\$1,285 per ounce was used and a cash flow of US\$299 million was determined over the life of the mine.**

### Feasibility Report

Work commenced on re-opening the main entrance at the huge Gubong Mine in July 2017. After the mine closed, the main adit was sealed and buried under tonnes of earth as part of a comprehensive rehabilitation process which saw all the buildings dismantled. Subsequently in January 2018, the initial key Competent Persons Report was published.



Work underground has resulted in medium grade gold grab samples. In January 2018, it was reported that 10 out of 15 samples taken had grades in excess of 1g/t gold with three samples assaying more than 10g/t gold. **In addition, there were high silver grades as well with 12 of the 15 samples being above 10g/t silver.**

Since then, there have been excellent results from the initial metallurgical test work on ore from Adit 4 with recoveries of over 90%. **Importantly, this analysis has demonstrated that the ore does not need complex extraction techniques.** A water treatment plant has been commissioned at Gubong with lab tests have showed that no heavy metals are present.

The feasibility report on reopening the Gubong mine was completed in July 2018. At that time, the board was able to report that the pre-construction phase had commenced which involved further exposure of the underground workings to allow for additional sampling and subsequent metallurgical test work.

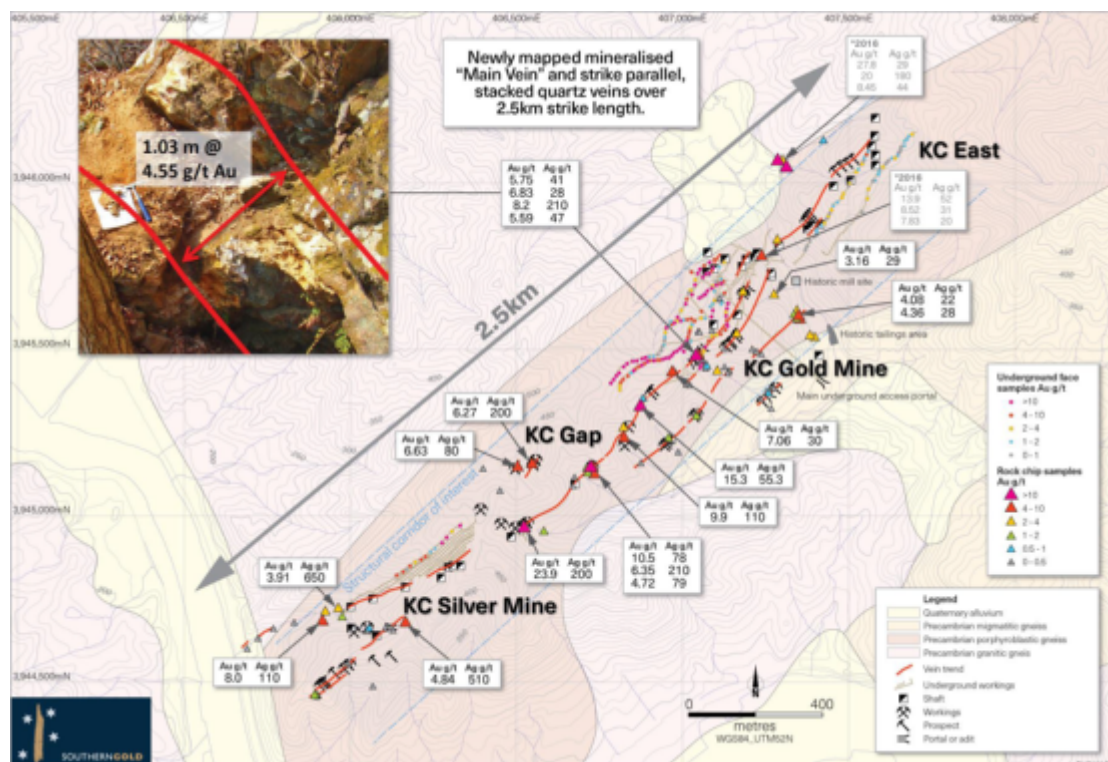
**In November 2019, the company received the “Permit to Develop” the Gubong mine which means that the Bluebird is now free to engage in a full-scale operation to reopen the mine and bring it back into production.**

## Kochang

The Kochang Mine was worked in a total of four different phases between 1928 and 1975. Work was restarted and an exploration adit dug towards the south in 1989-90. Production records are incomplete, but it is thought that 88,023 ounces of gold were mined in the 1938-75 period. A report by KORES records mine production totalling 110,000 ounces of gold and 5.9 million ounces of silver between 1961 and 1985.

Kochang is an epithermal vein system with the mineralisation consisting of gold silver quartz veins up to 600 metres in length, hosted in Pre-Cambrian aged host rocks. There are at least five gold quartz veins which trend in a NE direction and are seen to be dipping by 50-70°. Quartz veins consist of narrow quartz-sulphide veins and veinlets 2-10 centimetres plus there is evidence of the presence of higher-grade ore shoots.

There are actually two separate mines: Kochang Gold Mine and Kochang Silver Mine. The Kochang Gold Mine mined the Main Vein, whilst the Silver Mine mined the South Vein. Assay maps from the past combined with recent surface mapping suggests that there are several separate veins associated with the Main Vein which were not mined in the past. Workings extend over 1.2 – 1.5 kilometres or 2.5 kilometres if the silver shaft area is included.



2.5 kilometre of mineralisation delineated at Kochang by Southern Gold. Source: CPR January 2018

Surface mapping and sampling at the Kochang Silver Mine shows significant gold assays along with several additional veins that were not mined in the past. **Previous exploration work carried out, plus some drilling, has indicated the presence of high-grade ore shoots.** In the past, bonanza grades were reportedly mined in the upper levels of the north shaft vein.



In 1990, KORES undertook an airborne radiometric and magnetics survey which was part of a country wide investigation of old mining areas. The results showed that Kochang contained a Potassium Channel anomaly, together with a 1.5-kilometre-wide circular magnetic anomaly to the north. It is thought that the magnetic anomaly is a concealed intrusive one with the potassium anomaly likely to represent the hydrothermal outflow zones from that intrusive area.

The area containing these anomalies has since been mapped and chip sampled by Southern Gold and past owners. Four diamond drill holes were drilled to depths of 1,233 metres in 2016 by Asiatic Gold prior to being acquired by Southern Gold. Subsequent work by Southern Gold has led to the delineation of some 2.5 kilometres of mineralisation extending between the two historic mines.

## **Feasibility Report**

**Management seems to have great expectations for this mine as such deposits typically extend over 1 kilometre in depth and Kochang has historically only been developed to a depth of 150 metres.**

The company accessed the Main Vein at Kochang in February 2018. Ground conditions were reported to be excellent and access was gained to the bottom level of the old mine. The process of identifying early production feedstock material has already begun underground. In May 2018, the company was able to report that the initial results of grab sampling underground had demonstrated that sorting the broken rock by hand in the mine increased the grade from 1.69g/t to 5.12g/t gold. There has also been encouraging results from the sampling of the in-situ ore which was left behind by the original miners. **Bluebird has channel sampled a total of 1,330 metres of veins at five metre intervals which provided average assays of 5.29g/t gold and 31.54g/t silver.**

Late 2018 saw the mineral potential and metallurgical test work elements of the feasibility report on Kochang announced. Having reviewed all the existing data on Kohang, the initial Mineral Potential was estimated at being in the 550,000 - 700,000 tonnes range derived from a small area with grades ranging between 5.2 - 6.6g/t of gold and 27.3 - 34.8g/t of silver; with underground drill targets identified in close proximity to the three main veins. Excellent results were indicated from initial metallurgical test work on Kochang samples with the average grade of the composite sample of almost 5g/t gold and 19g/t silver. **Testing revealed gold recoveries of up to 80% and around 60% for silver using a simple gravity circuit which all looks to point towards the potential for a low-cost process.**

In May 2019, the company received confirmation of the drilling grant from KORES for its Kochang Drilling Programme. At this time, the board was able to report that the team had located a further six old adits (where evidence of historic mining has been noted at three) entering the mine some 100 metres to the northeast of the current entrance. **This all points to a potential increase in the general size of the deposit. In December 2019, Bluebird received a "Permit to Develop" the Kochang mine which then was seen to provide a low capex opportunity.**

## Strategy for growth

**Bluebird focuses on bringing old gold mines back into production. Although gold mining in South Korea has been off the radar for many years, it does seem as though the stage is set for tremendous value to be unlocked based on re-opening and revitalising historic gold mines in that country.** Refurbishing old mines has big advantages over the conventional exploration model as it is a much cheaper and faster route to production. By re-opening and revitalising old mines, **Bluebird will be saving on costs like US\$3,000 per metre of development driveway or up to US\$20,000 per metre for sinking a shaft.** On top of that, the timeline to production is far swifter as most of the costly exploration work has already been undertaken. Plus, there is a far better understanding of the geometry of the orebody, grade trends and characteristics that comes from years of exploration and mining.

With so many abandoned gold mines, South Korea provides some highly compelling opportunities for Bluebird's business model. The country's gold potential has been largely forgotten as it has not been a substantial producer for decades. Gold production in South Korea as good as ceased in the 1980s as the mines were no longer economic with the gold price below \$140 per ounce. Now 40 years on, with gold standing above US\$1,700 per ounce, the economics look highly attractive. These days there is a far better understanding of orogenic gold deposits along modern processing equipment and new reagents which allow for improved gold recoveries.

**Bluebird has a target of mining 100,000 ounces of gold per annum within five years of initial production, which would mean a net 50,000 ounces to the company.** Management has a well-developed plan which currently focuses on bringing the Gubong and Kochang mines back into production. Progress has been slower than hoped. However, in late-2019 the company received the key "Permit to Develop" for both these mines which means that Bluebird is now free to engage in a full-scale operation to reopen these mines and bring them back into production. The plan is to operate these two mines concurrently and as each mine has differing qualities which does provide the company with a lot of flexibility.

First into production is planned to be Kochang, which the smaller of the two mines and shallower. The plan is to begin by generating ore from underground clean-up and remnant mining. The partners are seeking to keep capital intensity low. The gold will be extracted using a simple process such as gravity or vat leach which both represent low cost technology for recovering gold. **The same strategy is planned at Gubong and in this way the joint venture will be able to achieve cash flow to organically fund an increasing level of gold production in South Korea.**





*A proposed mine layout at Kochang. Source: Southern Gold*

Gubong was the second largest gold mine in South Korea which in its heyday employed some 20,000 people and has the potential of being a company making project. The potential ore sources that are available at Gubong include: numerous surface stockpiles that were considered to be waste, tailings, ore from underground clean-up and remnant mining. These will be the source of the initial production with existing broken ore underground to be vacuumed or conveyed out by mechanised means. Further targets include remnant ore as well as the nine gold veins coalesce into a single vein right at the bottom of the mine with grades in the range of 15-20g/t.

The opportunity at Gubong seems to get bigger the more that Colin and Charles study this project. **Mining to date has only been to a depth of 500m (below the valley floor), but these orogenic orebodies tend to be 1,500m deep or more, so there is obvious potential at depth.** Diamond drilling has shown a continuation of the gold mineralisation 700m down dip which represents for all intents and purposes a new mine. **Based on their experience, Colin and Charles believe that Gubong may well have another 5Moz of gold that could be mined.** If the team decided to go for the bigger picture, which involves a wide-scale re-imagined project at Gubong, then year 3 (2023) of production could see a full-scale feasibility study based on the determination of a JORC-compliant resource to determine the optimum size for expansion.

**Feasibility studies have outlined an estimated average cash cost per ounce of US\$576/oz which is based on both mines over the initial 3 years.** The team is expecting that the grade early on will be around 4-5g/t gold and moving up to 8g/t. These studies have determined that the total capital expenditure required to reopen the mines at Gubong and Kochang for a 100,000 ounce per annum (pa) operation totals US\$28 million. **Gold production in the first year is planned to be 10,000 ounces, rising steadily to 30,000 ounces in year 3 (2024) with a planned major increase in year 5 (2026) to 100,000 ounces.** Naturally, all this is dependent on the company gaining the initial financing through the gold streaming loan and an easing of travel restrictions relating to COVID-19.

It looks to be a good time to be a junior about to commence gold mining. Gold has been one of the best performing assets since 2019, rising by a third since the beginning of last year. In a recently released research report, Bank of America (BofA) raised its price target by 50% and now reckons that gold could hit US\$3,000 an ounce within 18 months. The bank believes that this is all due to the record central bank balance sheets and government fiscal deficits. Interestingly enough, BofA commodities strategists believe that other factors will drive the gold price higher beyond the traditional gold supply and demand as financial repression is apparently back on an extraordinary scale. The bank is not alone in believing that the global economy is heading for its worst recession in almost a century due to coronavirus lockdowns with a fall in Q2 US GDP of as much as 30% being forecast.

South Korea has been largely forgotten by the mining industry. This is despite the country having had a substantial gold mining industry in the past and sitting on the Pacific Rim with big affinities to gold producing belts in China and Japan. **In a couple of years' time, when the bigger companies of the mining world wake up to the gold potential in this country, Bluebird could have already snapped up the best gold projects and have the systems in place.** In our view, this could make the company a highly desirable target for any larger operator looking to gain a footprint in South Korea. A lot of the pieces are already in place for such a scenario. At current gold prices, Bluebird already has the makings of becoming quite a money spinner. But that might be just the start as, if the price of the yellow metal approaches anything like the level that the BofA is forecasting, then any bidders circling Bluebird would need to pay a fairly chunky price.



## Financials & current trading

Results over recent years cover the company's move to focus its mining strategy on South Korea.

Y/E 30 June US\$'000s	2014A <sup>1</sup>	2015A	2016A	2017A	2018A
Revenue	-	-	-	-	-
Pre-tax profit/loss	- 32	-107	- 921	-1,555	-1,731
Net profit/loss	-32	-107	-921	-1,555	-1,736

<sup>1</sup> period from 12 March 2014 to 31 December 2014

*Bluebird Merchant Ventures five-year trading history. Source: Company accounts*

### 2018 results

Financial results for the twelve months ended 30<sup>th</sup> June 2018 marked a significant period of progress for the company with both projects in South Korea being pushed forward towards the joint venture stage. The re-stated pre-tax loss was US\$1.736 million and the basic earnings per share came out at US\$0.75 cents

### Interims

In February 2019 the company announced interim results for the six months to 31<sup>st</sup> December 2018, which marked a period when the team focused its activities on the Kochang mine and substantial progress was made in gaining access to the main adit as well as 3km of drives, raises and tunnels which were traversed and assay stake to allow metallurgical work to begin. After US\$0.381 million of farm-in costs and US\$0.593 million of administration costs, the group made a pre-tax loss of US\$0.876 million with a basic loss per share of US\$0.38cents.

### Recent developments

**In November and December 2019, the company was able to report that the key permit approval had been received for Gubong and Kochang respectively.** At the time, Bluebird commented that these permits provide a solid base for the company to advance into production and then grow in a substantially organic way from 10,000 to 30,000oz per annum over 3 years. Kochang was seen as providing a low capex opportunity with initial gold production in early 2021.

In late March 2020, the board announced that Bluebird had entered into a legally binding agreement with a South Korean company concerning non-dilutive funding to bring about gold production in South Korea. The agreement creates a path to provide US\$5M of debt finance that is planned to be repaid from future gold production.

Late April 2020 saw the board reporting that the company was reviewing its economic model for production scenarios at Gubong and Kochang. It was pointed out that project financials were originally determined based on a gold price of US\$1,200/oz rather than the current gold price in the high US\$1,600's which meant that the initial robust forecasted results should be significantly enhanced.

At the same time the board drew attention to a number of subsidies available (which range from 40% to 60% of direct costs) to the company from the South Korean government which should have a significant impact on capital costs. These include on-mine exploration drilling programmes, subsidised capital development for main access ways, productivity initiatives involving facilities and equipment and vertical shaft construction for ventilation. In addition, there are also subsidies relating to mine support, water discharge, monitoring and safety equipment.

## **Risks**

### **Geological risks**

There are a series of technical risk factors concerning the amount of understanding of the geology of the project areas, the mineralisation style being targeted and the distribution and magnitude of the indicators that have been identified in exploration work.

### **Metal price risks**

Metal prices are highly cyclical and changes in the price of gold and could have a negative or positive impact on the valuation of the company's projects and revenue from the sales of metals. Over the past twelve years the price of gold has been highly volatile, trading in the range of US\$1,899 - \$712 per ounce to currently trade around the US\$1,700 level.

### **Exchange rate risks**

Movements in the value of currencies will have an effect on the company's accounts on translation from the South Korean won into US dollars. Fluctuations in the value of the South Korean won and US dollar against sterling may influence the valuation that Bluebird is awarded by the market.

### **Future funds**

The market for raising funds for small cap companies look to have had improved from the worse conditions a couple of years ago. However, the global spread of the COVID-19 infection has meant that equity markets have become extremely difficult. Even before the arrival of this pandemic, some recent fund raisings in the resources sector have seen share prices being undermined by incoming investors demanding substantial discounts to provide the necessary capital.

### **Political risk**

South Korea is a developed world economy, but as with anywhere in the world there is always some degree of political risk attached to the mining industry. However, the government in South Korea is seen as being highly supportive of its mining sector, where it is incentivising exploration by providing grants for drilling and charging no royalty on production.



## Board of Directors

### **Jonathan Morley-Kirk – Non-Executive Chairman**

Jonathan has more than twenty years' experience as a Fellow of the Institute of Chartered Accountants in England and Wales. He has focused largely on natural resources and emerging markets. Jonathan has many years of public company directorship experience with international companies. Prior to moving to Jersey twenty years ago, he held directorial positions at Samuel Montagu & Co and S G Warburg in London.

### **Colin Patterson – Executive Director & Chief Executive Officer**

Colin has more than 40 years' experience in the mining industry in all major aspects of mining (management, production, design, exploration, evaluation, construction and corporate). He has held directorial and executive management positions at numerous mining and exploration companies and has operated and managed projects worldwide. Most recently Colin was Executive Chairman of a Philippine listed gold producer, Apex Mining. He is a fellow on Australian Institute of Mining and Metallurgy. Colin holds a degree of a Bachelor of Science in Engineering (Mining), a Bachelor of Commerce with honours in Business Economics (Finance).

### **Charles Barclay – Executive Director & Chief Operating Officer**

Charles has worked in the gold mining industry for more years than he cares to remember. His career has encompassed most mining and project positions from Sampler to Chief Operating Officer, a position he has held in three mining companies in the Asia Pacific area over the past twenty years. Charles has managed many projects including Vertical Shaft construction (South Africa), mine design and construction (Papua New Guinea and Vietnam) but his favourite projects have always been reopening and rejuvenating old mines and mine workings.

### **Aidan Bishop – Executive Director**

Aidan is the founding Director of Bluebird Merchant Ventures which was listed on the London Stock Exchange in 2016. Aidan has founded several startup ventures. These include a venture capital backed super premium award-winning chocolate company in the United Kingdom that exports globally. In addition, he founded a tech company, BigDish - a dynamic pricing restaurant booking app with operations in the United Kingdom and the Philippines. BigDish successfully listed on the London Stock Exchange in 2018.

### **Clive Sinclair-Poulton – Non-Executive Director**

Clive has many years of experience working as a Director of a number of companies within the natural resources sector. Since 2009 he has been Executive Chairman of Agricola Resources plc. Previously, from 2008 until November 2014, Clive was the Executive Chairman of Beowulf Mining plc, an AIM listed company. Prior to this he was a Non-Executive Director at Morning Star Holdings (Australia) Ltd, an aluminium processing and platinum exploration company listed on the ASX. Between 2004 and 2008, Clive held the office of the Chief Executive Officer at Bezant Resources plc, an AIM listed exploration company whose assets included a Philippine exploration project. He earned a Bachelor's and Master's degree in Law from St Catharine's College (Cambridge). Clive is a Member of the Chartered Institute for Securities and Investment.

### **Senior Management**

#### **Stuart Kemp – Chief Financial Officer**

Stuart is an MBA qualified Chartered Accountant. He has 30 years of experience working across various industry sectors in senior Financial, Operational and General Management roles. Stuart has worked for leading, innovative corporations in the UK, New Zealand and across SE Asia where he has been able to utilise his significant consultancy experience to ensure the delivery of effective, solution focused approaches to facilitate financial control and business growth.

#### **Graeme Fulton – Project Manager**

Graeme has been involved in the mining industry for more than 30 years. He has worked in New Zealand, Canada, Malaysia, Papua New Guinea, Vietnam, South Africa and Australia. Graeme has expertise in geological modelling & evaluation; Resource & Reserve definition/modelling; mine design & scheduling; feasibility studies audits and due diligence. He is a Fellow of the Australian Institute of Mining and Metallurgy. Graeme has a degree in Mining & Petroleum Engineering from Strathclyde University.

#### **Peri Resabel – Operations Manager**

Peri has over 40 years' experience as a Mining Engineer. He co-founded Paramina Earth Technologies, Inc., a mine development and civil construction contracting company in 1992 that had underground development contracts in Asia. Peri worked with Roan Consolidated Mines in Zambia and was a President of the Philippine Society of Mining Engineers; a Director of the Chamber of Mines of the Philippines; an APEC Engineer and was previously President and COO of Philippine listed gold producer, Apex Mining Co., Inc. He has a Bachelor's degree in Mining Engineering.

**Emy Fabro – Administration Manager**

Emy holds a Master's Degree in Communications. She began her career in the broadcasting industry before moving to Vietnam to work in an NGO. Her involvement in this organization led to her to a PR role in 2006 for a Canadian Mining company, Olympus Pacific Minerals where she met Colin Patterson and Charles Barclay. In 2009 she returned to the Philippines and took up a role in the Administration, Community Relations and HR in Apex Mining Corporation. She subsequently became the HR and Administration Group Manager at a gold mine owned and operated by Philex Mining Corporation.

**Darryl Norton – Engineering Manager**

Darryl has over 35 years of experience in the gold mining industry, particularly in Africa, the Former Soviet Union & South East Asia. He has been an Executive Director and Chief Operating Officer of two London listed companies KazakhGold and Oxus Gold. Darryl has also managed projects for mines, process facilities & infrastructure from design through construction to final commissioning/hand-over for numerous gold mining companies. He is currently COO of London listed Goldstone Resources.



## Forecasts

**We initiate coverage of Bluebird with forecasts for the 2020 to 2023 financial years.** Funding for the initial capital expenditure and working capital requirements has been assumed to be in place by the end of July 2020. **With such funds in place, discussions with the board have outlined that gold ore could be produced from the Kochang mine within six months.** At the same time, the processing plant is assumed to be commissioned. Fast tracking this project into production should allow the first gold pour three months later, which could happen in Q1 2021.

Gold production in 2021 is expected to be 7,000 ounces (3,500 ounces net to Bluebird) as the operation moves towards commercial production. In 2022, gold production is assumed to rise to 15,000 ounces (7,500 ounces net to Bluebird) from Kochang. The plan is for Gubong to be brought online in 2022 and production from these two mines is assumed to total 30,000 ounces in 2023 (15,000 ounces net to Bluebird less 1,500 ounces paid to the provider of the gold loan/streaming finance) based on 20,000oz pa from Kochang and 10,000 oz pa from Gubong).

<b>Year End 31 December (000s 'US\$)</b>	<b>FY 2020e<sup>1</sup></b>	<b>FY2021e</b>	<b>FY 2022e</b>	<b>FY 2023e</b>
Revenue	-	5,950	12,750	22,950
Cost of Sales	(500)	(2,020)	(4,320)	(8,640)
Gross profit/(loss)	(500)	3,930	8,430	14,310
Administrative expenses	(1,200)	(1,200)	(1,200)	(1,200)
Farm in costs	(500)	-	-	-
<b>Operating profit/(loss)</b>	<b>(2,200)</b>	<b>2,730</b>	<b>7,230</b>	<b>13,110</b>
Exchange gain/(loss)	(250)	-	-	-
Finance gain/(expense)	-	-	-	-
<b>Profit/(loss) before taxation</b>	<b>(1,950)</b>	<b>2,730</b>	<b>7,230</b>	<b>13,110</b>
Income tax expense	-	-	-	-
<b>Profit/(loss) for the year</b>	<b>(1,950)</b>	<b>2,730</b>	<b>7,230</b>	<b>13,110</b>
Attributable:				
Equity shareholders to the parent company	(1,950)	2,730	7,230	13,110
<b>Earnings per share</b>				
Basic profit/(loss) per share (cents)	(0.52)	0.69	1.83	3.22
Basic profit/(loss) per share (pence) *	(0.63)	0.57	<b>1.51</b>	<b>2.66</b>
Weighted average number of shares	373,203,881	395,328,537	407,172,583	410,713,152
Total shares plus warrants and options	416,471,076	416,471,076	416,471,076	416,471,076

<sup>1</sup> - 18 months to 31 December 2020

\* GBP/USD FX Rate of 1.21 used

Source: Company/Align Research

## Valuation

Our valuation is based on production from both the Kochang and Gubong Mines. To this end we have developed a financial model of both these mines based on the CPRs, feasibility studies, discussions with management and costs of similar sized projects around the world. Our analysis is based on employing a flat gold price at the current level of \$1,700 per ounce over the life of the project.

**In order to remain conservative, the remaining resources available to be mined have been deduced from the results of both estimates determined by KORES and work by the company.** At Kochang, work by the company has outlined a total estimate of the mineral potential of between 550,000 - 700,000t of 5.2 - 6.6g/t gold and 27.3 - 34.8g/t silver (announced on 20<sup>th</sup> November 2018) for a calculated of 116,000oz gold. Meanwhile, the KORES 2018 sampling programme over a small area of Kochang led to this South Korean government owned company determining a Total Indicated and Inferred Resource of 113,280oz gold at a grade of 6.55 g/t gold and 35.97g/t silver versus Bluebird's reported silver grade of 31.54 g/t.

At Gubong, the remaining resource by KORES was estimated at 2.34Mt at 7.36g/t - equating to 555,299 ounces of gold. The independent CPR dated June 2019 CPR pointed out that *"..The 3D model demonstrates the size of the Gubong Mine and the potential size of the remaining resources. Various estimates, including the International Gold ESS place great value in the 2003 KORES historical resource of ~500,000 oz Au. The 3D model will provide quantifiable remnant resources and early mining targets once mapping and sampling has been completed in the reopened mine..."*

**The previous independent CPR report dated January 2018 highlighted that Gubong had the greatest potential resource, estimated in excess of one million ounces of gold, as well as having the largest area to explore.** In addition, the ESS also considered that there was potential to incorporate a number of satellite deposits (Pungsan, Ongnam and Yangi) where KORES had estimated further resources totalling 300,000 ounces of gold. Finally, the EES also considered tailings as providing additional potential. **In all, EES estimated a total of 2.7Mt of ore at an average grade of 7.0g/t and with more than 575,000 ounces recovered.**

Whilst the KORES results do not represent JORC-complaint resources, the Korean system does seem to be logical. The company does not intend to go down the route of delineating JORC resources immediately, although this is likely to form part of the feasibility studies over the bigger prize at Gubong which is planned to be investigated from year 3 of production (2023). In the past, the authors of the EES, which International Gold undertook on Gubong in 2011, considered that the historic resource could be upgraded to JORC using 2007 core and further drilling.

Our model is based on the joint venture partners mining a combined resource from Kochang and Gubong as has been outlined in the independent work (on the previous page). **We have modelled for an expected production level of 500,000tpa. A mine life of 10 years is estimated with an annual yield of 100,000oz pa when name plate capacity is achieved.**

Year	Combined gold production from Kochang and Gubong mines (ounces)	
	Total	Net to Bluebird
2021	7,000	3,500
2022	15,000	7,500
2023	30,000	15,000
2024	40,000	20,000
2025	70,000	35,000
2026 - 30	100,000	50,000

*Assumed gold production project over the period that has been modelled*

**Management believes that recoveries in excess of 90% are likely and so we have assumed a 90% recovery, but with 85% initially in the first year of production.** The long-term grade has been chosen to be 7g/t - in line with the KORES resource estimates, with an average grade of a 4.5g/t and 6.5g/t in the first two years. With production rising from 2021 to achieve plateau production level of 100,000oz pa recovered in 2026.

Feasibility reports for re-opening the mines at Gubong and Kochang have already led to the indicated necessary capital expenditure for a 100,000 ounce per annum operation being estimated at a capital cost of US\$28 million over a five-year period. Over the first three years, a total spend of capital expenditure has been estimated at US\$7 million, with around 50% of that total being funded out of gold production as production grows from a run rate of 10,000oz to 30,000oz per annum.

The capital expenditure budget in years 4 and 5 (2024 and 2025) has been estimated at US\$21 million, where approximately US\$4 million will be funded out of gold production, which will fuel the step change in gold production from 30,000oz to 100,000oz per annum.

The board has recently announced that Bluebird had entered into a legally binding agreement with a South Korean company concerning non-dilutive funding to finance gold production in South Korea. The agreement creates a path to provide US\$5M of debt finance that is planned to be repaid from future gold production. To be conservative we have assumed that the financing is at the lower end of that range, even so such a level of funding will be more than adequate for gold production to begin.

In year 3 (2024) as Bluebird is developing the mines in order to substantially boost production in years 4 and 5 (2025 and 2026), we look at the balance of necessary funds being raised by a conventional loan at current market rates.

There are number of subsidies available to the company from the South Korean government which equate to 40-60% of direct costs which would have a significant impact on capital costs. In order to maintain our conservative stance, we have not assumed that Bluebird receives any of this type of funding.



The company has estimated an average cash cost per ounce (C1 level) of US\$576 per ounce, which is based on both mines over the initial 3 years. This is the figure that we have used over the life of the project. The South Korean corporate tax rate of 30% has been applied.

**Annual cash flows resulting from Bluebird's 50% interest in the project have been discounted using a 12% discount factor, which serves to risk these already highly conservative figures. The net present value of the project at a 12% discount rate comes out at US\$136.02 million (£109.70 million).**

Using the current number of shares in issue (371,001,617) suggests a per share valuation of 29.56p and on a fully diluted basis (416,471,076) this valuation equates to 26.34p per share on the basis of an unrisks NPV (12). **We however wish to be even more conservative to allow for both loan and project execution risk and so discount this NPV by 50% resulting in a derived valuation of 13.17p per share.** When the loan facility closes then the risk factor would of course be reduced and we would take the opportunity to increase our adjusted valuation accordingly.

At this stage, it is worth looking at the prospective PE ratios of London-listed gold producers valued at under £100 million. The average 2021 prospective PE ratio is 8 times earnings. **Using that kind of prospective multiple with our earnings forecasts for 2022 and 2023 suggests share prices of 12.08p and 21.28p respectively.**

Company	Share price p	Market Capitalisation £ million	2020 PE ratio
Ariana Resources (AAU)	3.35	35	10
Goldplat (GDP)	4.75	8	12
Hummingbird (HUM)	26.0	92	5
Serabi Gold (SRB)	82	48	5
Average			8

*2021 prospective PEs of London-listed gold mining companies with a market capitalisation under £100 million. Source: Digital Look*

**Taking a blend of the 2022 sector average PE multiple of 8 times and not allowing for any multiple expansion given the growth profile of Bluebird relative to its peers, together with the 50% discounted NPV figure provides us with a first highly realistic price target of 12.63p per share.** When the debt facility closes then the risk factor would of course be reduced and we would take the opportunity to increase our adjusted valuation accordingly.

We believe our target price is highly conservative due to the reasons relayed here as well as the fact that the scale of potential at the Gubong mine, in particular, looks like being a company-maker. Far higher grades in the realm of 15-20g/t gold have been found at the bottom of the existing workings at Gubong mine which is expected could extend a further 500 metres as orogenic gold deposits tend to characteristically.

## Conclusion

**Bluebird offers a highly compelling gold play with a commitment to provide a decent pipeline of news to keep investors fully informed.** Management has extensive experience of bringing old mines back on stream with powerful economics due to the attractively lower costs of refurbishing an old mine compared with building a new one. At the same time, no amount of advanced exploration and drilling can ever provide the level of knowledge and comfort that the data from the historic mining of a deposit provides.

The mining team at the helm of Bluebird has a highly successful track record of bringing old narrow vein gold underground mines back to life and unlocking the value. These highly experienced mining engineers are the first people to have stepped into these mines for probably thirty years and now look set to optimise the economics using modern mining practices, processing, equipment and reagents plus the latest mineralisation models. **In small cap stocks management is key and there is nothing more reassuring for investors than having a company being run by a Board that have proven themselves in a similar previous highly successful gold mining ventures and that are aligned with investors through their shareholdings – something we have learnt the hard way in recent years.** This box is resolutely ticked here.

Over the next 10-12 months, there would look to be a highly positive news flow ahead of the first gold pour. We look forward to being able to revisit our target price as the company moves ever closer to this time ahead of establishing sustained gold production at both Kochang and Gubong. **However, this could just be the start as both Kochang and Gubong are set to be pushed very smartly up the valuation curve** by a team that knows full well how to achieve and deliver shareholder value.

We have to point out that all this is happening against the supportive backdrop of a rising gold price, with Bank of America forecasting a US\$3,000 price by the end of 2021. Currently, it looks like gold's weather as the global economy is now facing its worst recession in almost a century, with some experts predicting that the recession will be the deepest peak to trough decline in recent memory. Moving ahead, inflation is likely to be roused as many central banks have been injecting huge amounts of liquidity into the financial system and there is plenty more to come. **These are just the sort of market conditions that can magnify profits from gold mining, especially from projects like Bluebird's that have such attractively low operating costs and a rapidly rising level of gold production.**

**Our coverage of Bluebird Merchant Ventures is updated with an initial target price of 12.63p and a Conviction Buy stance.**

## DISCLAIMER & RISK WARNING

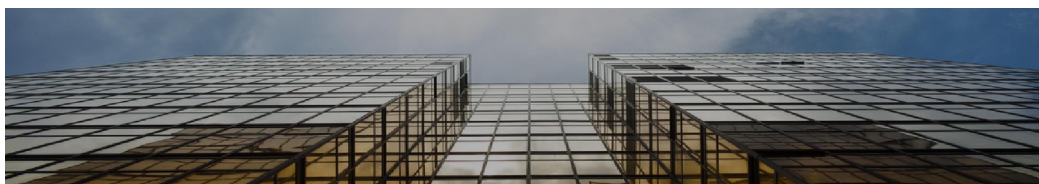
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