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# The premier potash and multi agri-commodity opportunity

Paul Donaldson, Managing Director
December 2016





or personal use only

"Danakali, which is developing a project in Eritrea, has perhaps made the most progress of all greenfield SOP projects over the last 12 months."

- CRU Consulting, October 2016, Potash Update

## Forward looking statements and disclaimer



The information in this presentation is published to inform you about Danakali Limited (the "Company" or "DNK") and its activities. DNK has endeavoured to ensure that the information enclosed is accurate at the time of release, and that it accurately reflects the Company's intentions. All statements in this presentation, other than statements of historical facts, that address future production, project development, reserve or resource potential, exploration drilling, exploitation activities, corporate transactions and events or developments that the Company expects to occur, are forward-looking statements. Although the Company believes the expectations expressed in such statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in forward-looking statements.

Factors that could cause actual results to differ materially from those in forward-looking statements include market prices of potash and, exploitation and exploration successes, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, as well as those factors disclosed in the Company's filed documents.

There can be no assurance that the development of the Colluli Project will proceed as planned. Accordingly, readers should not place undue reliance on forward looking information. Mineral Resources and Ore Reserves have been reported according to the JORC Code, 2012 Edition. To the extent permitted by law, the Company accepts no responsibility or liability for any losses or damages of any kind arising out of the use of any information contained in this presentation. Recipients should make their own enquiries in relation to any investment decisions.

Mineral Resource, Ore Reserve and financial assumptions made in this presentation are consistent with assumptions detailed in the Company's ASX announcements dated 25 February 2015, 4 March 2015, 19 May 2015, 23 September 2015, 30 November 2015 and 15 August 2016 which continue to apply and have not materially changed. The Company is not aware of any new information or data that materially affects assumptions made.

## **Corporate Snapshot**



### **Financial information**

(As of 30 Nov. 2016)

)).	
Share price	A\$0.39
Number of shares	224.2m
Market capitalisation	A\$87.4m
Cash (30-Nov-16)	A\$11.0m
Debt (30-Nov-16)	Nil
Enterprise value	



#### **Top shareholders**

Source: IRESS

Well Efficient Hong Kong private investor	13.4%
JP Morgan (UK)	9.0%
Danakali Board members	12.2%

## **Overview of the World's Premier Potash Opportunity**



# Colluli is a world class sulphate of potash (SOP) project with unrivalled resource, economics and diversification potential

World class resource <sup>1</sup>	1.3 billion tonne resource 1.1 billion tonne ore reserve > 200 year mine life	
Positively unique	Right combination of potassium salts for low energy input, high yield conversion to SOP Salts extracted in solid form — eliminating capital intensive evaporation ponds, and providing consistent, predicable, reliable, non weather dependent production	
Unrivalled access to coast and global markets	Located at the epicentre of booming population growth Closest SOP deposit to a coastline and established export infrastructure globally	
Exceptional feed grade	25 times more potassium in ore feed than brines <sup>2</sup> and vastly superior waste to ore ratios	
Exceptional economics	Industry leading capital intensity Bottom quartile operating cost curve position The most attractive advanced stage pre-production SOP project globally	
Unrivalled growth and diversification potential	Unique capability to produce diverse range of potash types Appreciable amounts of kieserite, gypsum, magnesium chloride and sodium chloride	
Right team	Highly experienced team with an excellent track record of project delivery, technical expertise and operational excellence	

Danakali DFS 30 November 2015

<sup>2</sup> Calculated from Colluli resource data and published brine compositions

## The most advanced greenfield SOP project globally



	Milestone	Outcome
al use on	DFS complete	<ul> <li>✓ Simple, commercially proven process</li> <li>✓ Independent technical review of process design, mass balances, evaporation trials and metallurgical test program completed</li> <li>✓ Low development capital</li> <li>✓ Industry leading capital intensity</li> <li>✓ Bottom quartile operating cost curve position</li> <li>✓ World class resource with over 1bt ore reserve</li> </ul>
Poliberson	Offtake MOUs signed	<ul> <li>✓ MOU's signed for 800kt per annum of SOP</li> <li>✓ Offtake discussions progressing towards Heads of Agreement</li> </ul>
	Front end engineering and design bidding complete	<ul> <li>✓ Site visits completed</li> <li>✓ FEED bidding process complete</li> <li>✓ Kick off expected January 2017</li> </ul>
	Mining agreement and license approvals process well advanced	<ul> <li>✓ Ministry of Energy and Mines review complete</li> <li>✓ Independent social and environmental review committee review complete</li> <li>✓ Social and Environmental Impact Assessment (SEIA) approved</li> <li>✓ Mining agreement well advanced</li> </ul>









## **Industry Overview**

## Fertiliser demand growth will continue







































## POTASSIUM IS AN ESSENTIAL, NON-SUBSTITUTABLE NUTRIENT, WHICH IS PROVIDED BY THE ADDITION OF POTASH FERTILISER

#### Growth fundamentals are excellent

- 30% increase in global population by 2050¹
- 70% increase in agricultural yield required by  $2050^{2}$
- 12% increase in average daily calorie intake<sup>2</sup>
- 33% increase in agri-demand of fruit and vegetables<sup>2</sup>
- SOP ideal for high value, chloride intolerant crops including fruits, nuts and vegetables<sup>3</sup>
- SOP is the preferred potash type in areas of low rainfall to prevent accumulation of chloride in soils<sup>3</sup>
- SOP demand forecast to grow by at least 4% per annum 4

Global Population Growth <sup>1</sup>	7B	9B 2050
Agricultural Production needs to increase <sup>2</sup>	70%	2050
Water demand expected to increase <sup>5</sup>	55%	2050

United Nations – Department of Economic and Social Affairs

International Fertiliser Institute

CRU, IFA, FAO, Company Research

## **SOP is the PREMIUM POTASH**











## SOP IS A HIGH VALUE, CHLORIDE FREE SOURCE OF POTASSIUM

### **Premium Price**

- Sustained price premium of over 100% relative to MOP1
- Secondary production provides high margins for primary producers



- Limited economically exploitable primary resources
- Over 50% of world's supply from expensive secondary processing of MOP (KCI)<sup>2</sup>



#### **Essential Macro-nutrient**

- Potassium is an essential, non-substitutable nutrient
- SOP critical for high value, chloride intolerant crops such as fruits, nuts and vegetables
- SOP also provides sulphur

### **Increasing Importance**

- Demographic shift to high value specialty crops
- Environmentally friendly no chlorine, low salinity index
- Highly suited to increased focus on improved water efficiency in agricultural sector

MOP prices based on FOB Vancouver prices, SOP prices based on FOB Utah prices

## **SOP** demand will increase by over 30%











## SOP IS A MULTI-NUTRIENT FERTILISER ESSENTIAL FOR HIGH **VALUE, CHLORIDE INTOLERANT CROPS**

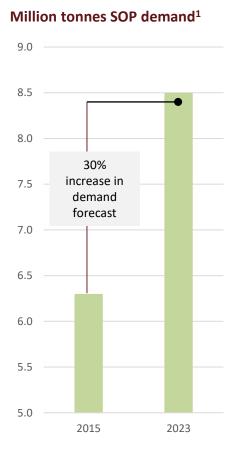
- A significant increase in global SOP consumption is forecast <sup>1</sup>
- 33% increase in demand for high value fruit and vegetables till 2050
- Colluli is well positioned as an advanced stage project to take advantage of global growth



Orange without SOP<sup>2</sup>



Orange with SOP<sup>2</sup>



<sup>1.</sup> CRU 2. IC Potash

## Over 60% of SOP supply will come from high cost secondary production by 2020









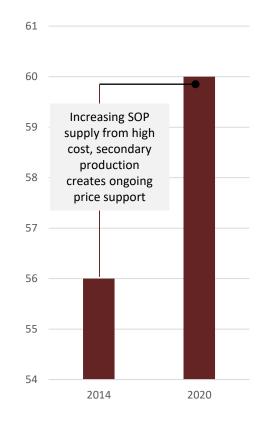




## LACK OF ATTRACTIVE PRIMARY PRODUCTION PROJECTS REQUIRES INCREASED HIGH COST SUPPLY TO MEET DEMAND

- Lack of attractive primary SOP projects requires additional secondary production to meet growing demand - high cost secondary production requires thermal conversion of sulphuric acid and potassium chloride to produce sulphate of potash (SOP)
- Acid management, storage and disposal cause ongoing challenges for secondary producers, adding to conversion costs
- Secondary producers create a high price floor for primary producers who will continue to enjoy high margins

#### % SOP from secondary production<sup>1</sup>



Source: Greenmarkets, CRU

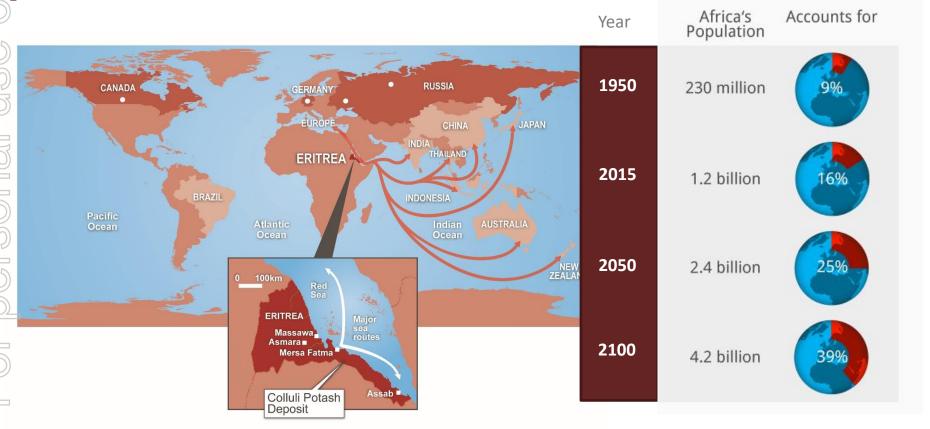
MOP prices based on FOB Vancouver prices, SOP prices based on FOB Utah prices

# Colluli – positioned where fertiliser and food security is needed most





## BY 2050 25% OF THE WORLDS POPULATION WILL BE AFRICAN<sup>1</sup>



## SOP has demonstrated price resilience

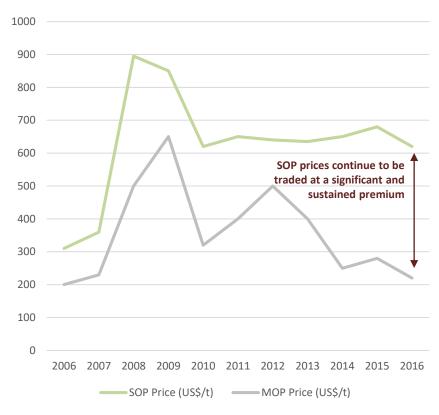




# LACK OF NEW SOP SUPPLY HAS PROVIDED SIGNIFICANTLY HIGHER PREMIUMS – DESPITE OVERSUPPLY OF MOP

- Continued growth demand, coupled with lack of new supply has resulted in significantly higher premiums over potassium chloride (MOP)
- There are only four projects in the world at DFS level (including Colluli)
- Colluli demonstrates:
  - lowest development capital of all advanced projects
  - bottom quartile operating cost curve position
  - low incremental growth capital
  - unrivalled project upside and substantial mine life

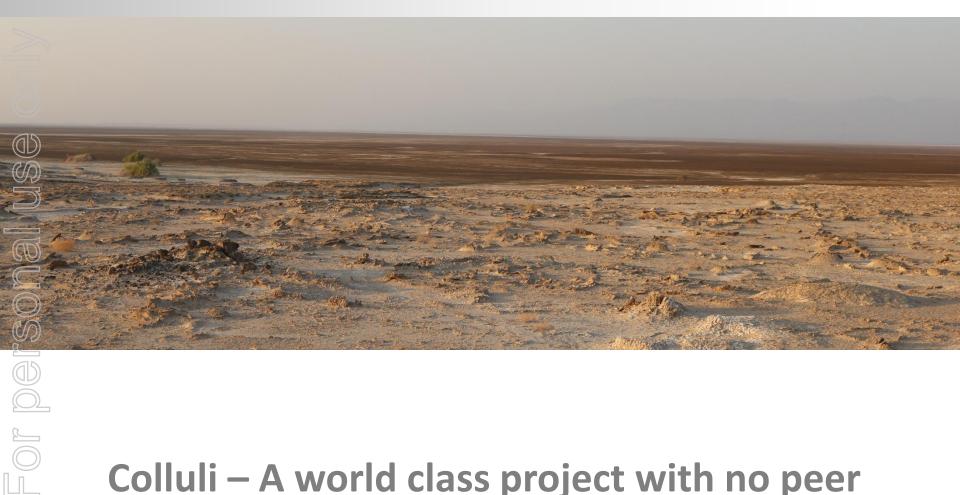
### Historic MOP and SOP prices (US\$/t)1



Source: Greenmarkets, CRU

<sup>1</sup> MOP prices based on FOB Vancouver prices, SOP prices based on FOB Utah prices





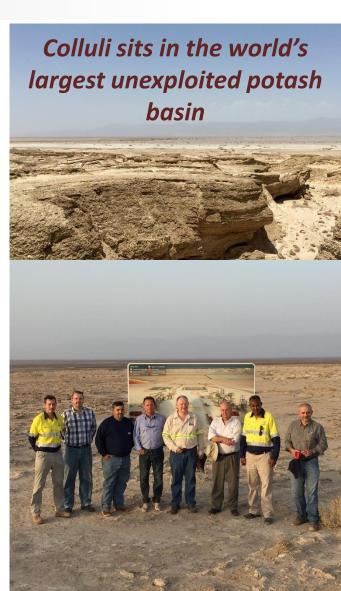
## Colluli – A world class project with no peer

Photo of Colluli site

## Colluli – a positively unique resource



- There is only one Colluli!
- Shallow mineralisation allows open cut mining and extraction of salts in solid form.
  - · A proven, safer method than underground mining
  - Massive conversion of resource to reserve (over 85%)
  - Significant footprint size, grade and production reliability benefits over brines
  - Lower complexity than brine chemistry management
  - Low incremental growth capital
  - Monetisation of other salts extracted as waste
- Massive 1.1 billion tonne ore reserve
- The most favourable combination of potassium bearing salts suitable for production of SOP, SOP-M and MOP
- Unrivalled diversification potential appreciable amounts of gypsum, kieserite, rock salt and magnesium chloride
- Access to export infrastructure



# Large, low cost, long life resource close to established infrastructure



Large, long life resource <sup>1</sup>

**Easily accessible** 



> 1.3 Bt resource

> 1.1 Bt ore reserve

No vegetation
No communities within tenements
Mineralisation starts at 16m

Close proximity to established infrastructure<sup>2</sup>



Bitumised and all weather road runs to within 40km of Colluli site

Well established export facility<sup>3</sup>



Port of Massawa
6 berths
Bulk and container shipping capability
Storage area allocated for Colluli product

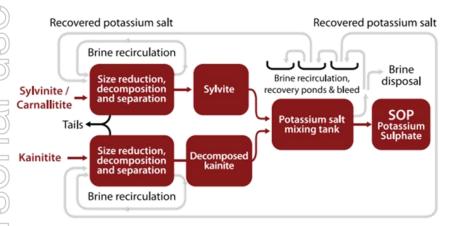
- 1 Photo of Colluli site
- 2 Road from Massawa towards Colluli
- 3 Massawa Por

## Simple, commercially proven technology



# PRODUCTION OF SOP FROM COLLULI SALTS OCCURS WITH SIMPLE PROCESSES INCLUDING FLOTATION, MIXING AND DRYING

#### Colluli process design



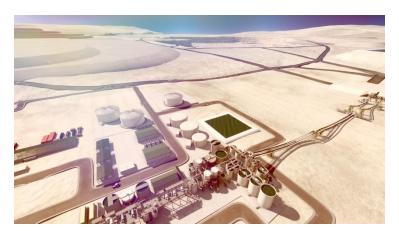
Simple processing – Crush – Float – Mix – Dry - Truck

## Colluli contains the right combination of potassium salts for ambient temperature conversion to SOP

- The combination of sylvite and kainite is ideal for low temperature, <u>high</u> vield conversion to SOP
- No thermal decomposition required (kainite only brine operations require brine to be heated to 55°C to produce SOP)
- Heated brines typically achieve potassium yield 10% to 15% lower than ambient conversion

#### Colluli plant images





## Significant advantages over potassium brines



or personal

## EXTRACTION OF SALTS IN SOLID FORM PROVIDES A SIMPLE, HIGH YIELD PRODUCTION PATH TO SOP

## **Simplicity**

- Brine chemistry management is complex
- Colluli processing plant utilises simple, proven, mineral processing units

### Lower energy input

- Sulphate rich brines typically require heating to 55°C for thermal decomposition
- Consistent, predictable feedgrade
- Production rates not weather dependent
  - Production rates from brines directly proportional to weather conditions

### Smaller footprint

- No pre-production ponds
- Higher potassium yields



## **Outstanding DFS economics**



# COLLULI DOMINATES OTHER PROJECTS WITH RESPECT TO VALUATION OUTCOMES

#### **Key DFS results**

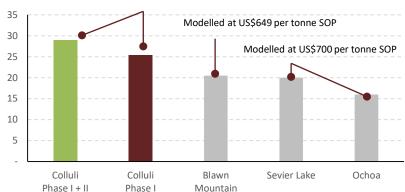
Metric	Phase I	Phase I and II
Production	425kt	850kt
Strip ratio	1.91	1.93
Post tax NPV (10% real) CMSC	US\$439m	US\$860m
Post tax IRR <sup>CMSC</sup>	25.4%	29.0%
Post tax NPV (10% real)DNK	US\$206m	US\$397m
Post tax IRR <sup>DNK</sup>	22.3%1,2	<b>25.</b> 9% <sup>1,2</sup>
Capital	US\$298m	
Incremental Phase II capital		US\$175m

### Supportive laws for mining investment in Eritrea<sup>3</sup>

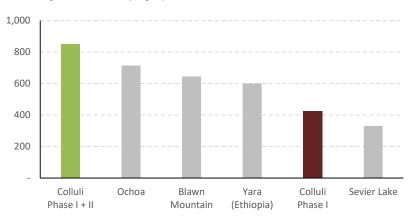
- Accelerated depreciation (straight line, 4 years)
- 10 year carrying forward of losses
- Generous reinvestment deduction (5% gross income)
- Stable corporate tax

Source: DNK Company announcements, Company websites

## Post-tax IRR (%) Modelled at US\$575 per tonne SOP



#### Annual production (ktpa)



<sup>1</sup> In accordance with CMSC Shareholders Agreement

<sup>2</sup> Third party debt estimated at 60% of project funding

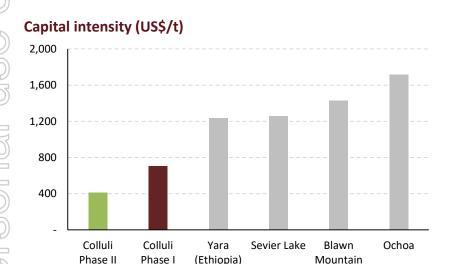
<sup>3.</sup> Eritrea Mining Proclamation

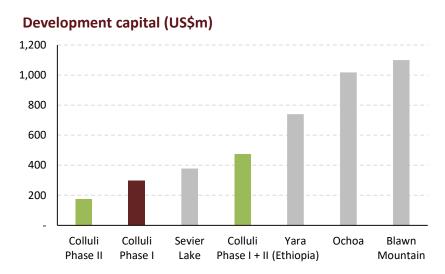
## **Industry leading capital intensity**





# INDUSTRY LEADING CAPITAL INTENSITY AND LOW DEVELOPMENT CAPITAL RENDERS COLLULI HIGHLY FUNDABLE





#### The Colluli resource is positively unique:

- Colluli has the right combination of potassium salts for low cost, high yield SOP production
- It is the shallowest evaporite deposit in the world making it amenable to open cut mining
- Extraction of salts in solid form negates the need for large evaporation ponds reducing capital intensity
- Mining and processing salts in solid form will result in **stable, consistent, and reliable production**

## Low payback period

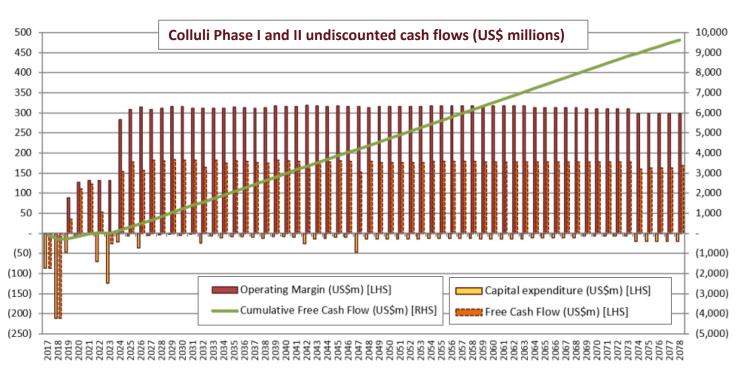


## **EXCEPTIONAL FREE CASH FLOW PROFILE**

Financing of the initial development capital is expected to be a combination of third party debt (up to 70%) raised by CMSC and a shareholder contribution from Danakali (30%)

Annual average free cash flows over A\$100 million (US\$81 million)<sup>1</sup> per annum for Phase I and over A\$220 million (US\$166 million)<sup>2</sup> per annum for Phase II

Capital payback period 3.5 years. Majority of Phase II development capital expected to be funded by operating cash flows



- 1. US\$81 million as per DFS (ASX Announcement 30 Nov 2015)
- 2. US\$166 million as per DFS (ASX Announcement 30 Nov 2015)

Source: DNK Company announcements, Company websites

## **Monetisation potential beyond SOP**





## Unrivalled multi agri-commodity potential

### MOP

- Improves yield for wide range of crops
- Most concentrated form of granular potassium
- Demand is elastic (easy to substitute)
- Market is well supplied by global potash majors
- Generally higher development costs

#### SOP

- Danakali's key focus
- Improves yield of high value crops
- Suitable for chloride intolerant crops
- Demand is inelastic (not as easy to substitute, premium product leads to sticky demand)
- Global supply shortage of primary resources
- Sulphur is a key nutrient
- Fewer natural sources
- Higher margin

#### SOP-M

- Demonstrated production from Colluli
- Limited supply and carries a price premium
- High grade, chloride free premium fertiliser
- Multi-nutrient fertiliser suitable for crops where three major nutrients are required
- SOP-M production ability confirms Colluli's multi agricommodity business potential

~3% of potash supply

#### Kieserite

- An effective source of both magnesium and sulphur (magnesium sulphate)
- Suitable for all types of crops and use in any soil type
- Identified in potassium salt seams
- Volumes currently being evaluated

#### Gypsum

- Source of calcium and sulphur
- Improves acid soils and treats aluminium toxicity
- Improves soil structure and water infiltration
- Reduces run off erosion
- Detected within the Colluli tenements

Additional agri-product potential

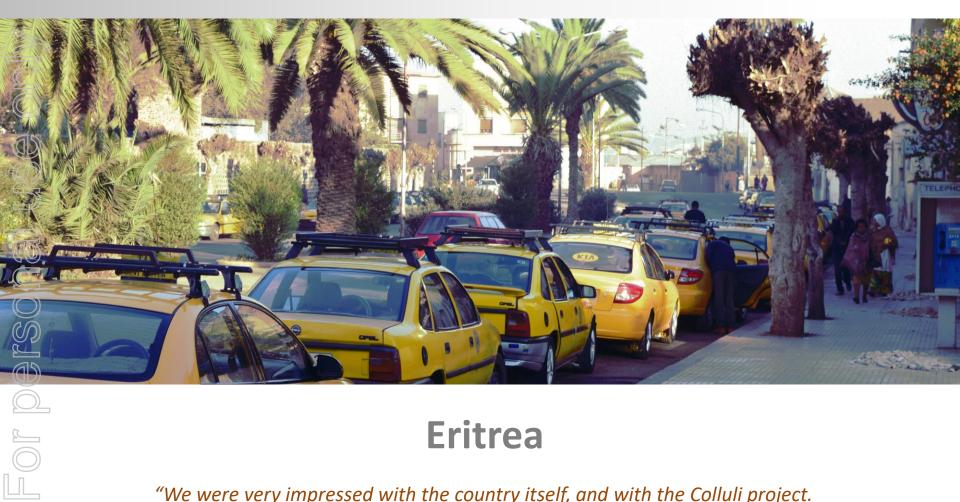
~85% of potash supply

Major potassium products <sup>1</sup>

~10% of potash supply

1. CRU





## **Eritrea**

"We were very impressed with the country itself, and with the Colluli project. Management has a very good relationship with the Government."

Hartleys Research Report: "Site visit to Eritrea confirms world class SOP project"

1 Nov. 2016

## Eritrea – Safe, stable and progressive





# DANAKALI HAS BEEN OPERATING IN ERITREA SINCE 2009 AND HAS FOUND IT TO BE SAFE, STABLE AND DEVELOPMENT FOCUSED

#### **Positive Eritrean outlook**

- The Danakali experience in Eritrea:
  - · Safe and friendly
  - High degree of focus on health and education
  - Development focussed with an emphasis on the agricultural, industrial and mining sectors
  - Stable government
  - Building up a track record of success in a maturing mining industry
  - No evidence of corruption
  - Gender equality
- CMSC (ENAMCO and Danakali) are progressing a sustainable development framework that addresses the policy, management plans and compliance monitoring in key areas including:
  - · Human rights
  - Anti-corruption
  - Communities
  - Health and safety

Tour of Eritrea cycling race (April 2016)



Development at the Massawa port



## **Multiple Mining Success Stories in Eritrea**















## THERE ARE MULTIPLE HIGH PROFILE EXAMPLE OF MINING **INVESTMENT IN ERITREA**

### **Eritrean mining background**

- Nevsun Resources (TSX:NSU) is a major Eritrean-focused mining company
  - JV company formed with ENACMO and now operates Bisha copper mine
  - Successful modular JV development with **ENAMCO** paves the way for Colluli JV
  - Significant shareholders in Nevsun are globally recognised investors who have demonstrated comfort with investment in Eritrea
- Recent purchase of 60% of Asmara (copper, zinc, gold) by Chinese investor for C\$85m
- Joint venture agreement and relationship with ENAMCO is a key enabler of project success

### **Major Eritrean mining developments**

#### Bisha

Undergoing third expansion





Shareholders Blackrock



Commissioned and producing



#### Asmara

60% recently acquired by a Chinese investor



#### Supportive laws for mining investment

- A stable tax regime, with corporate tax rate of 38%
- Accelerated depreciation straight line over 4 years
- Generous reinvestment deduction (5% gross income)
- 10 year carrying forward of losses
- 0.5% import duty on mining inputs
- Simple "one stop" licensing system

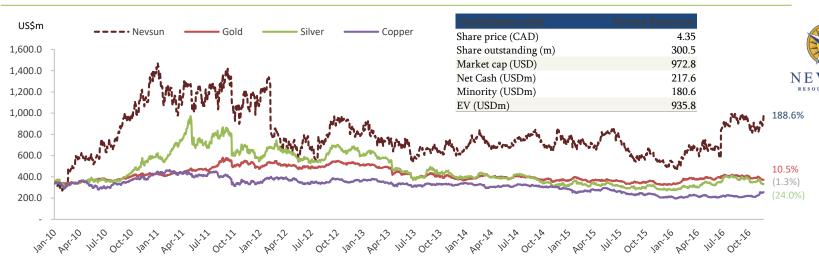
...and there have been no changes to mining legislation in Eritrea

Source: Nevsun Resources August 2015 corporate presentation, Bloomberg, company websites

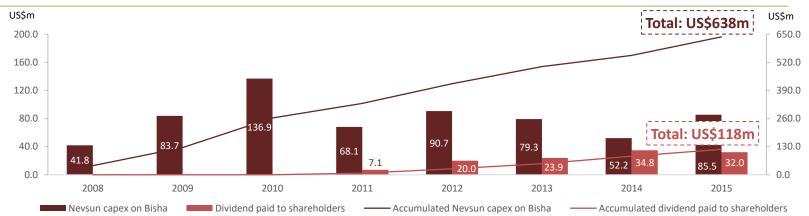
## Nevsun Resources – Case study Cumulative Capex Spend > US\$600m Shareholder dividend > US\$100m



Nevsun market capitalisation compared to commodities performances



Capex invested by Nevsun into Bisha mine and dividend paid to shareholders



Souce: Company filings and S&P Capital IQ as of 23 November 2016 Note: All prices rebased to Nevsun market cap

## **Working in partnership with ENAMCO**



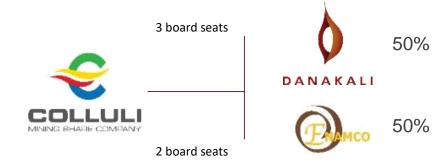


## DNK AND ENAMCO ARE ADVANCING A WORLD CLASS POTASH PROJECT

### Government support and strategic alliance

- Eritrea is a stable jurisdiction with a rapidly emerging mining industry.
- Danakali has a strong, effective working relationship with the Government through its joint venture.
- Agreement with the Eritrean National Mining Corporation (ENAMCO).
  - ENAMCO and Danakali each hold a 50% ownership in the Colluli Mining Share Company.
  - Project Development Costs for initial development will be funded by up to 70% debt and 30% equity.
  - The CMSC board was established following the incorporation of CMSC in March 2014. The board is overseeing the project development.
  - CMSC has a board of 5, with 3 members from Danakali and 2 from ENAMCO.

The structure allows Government direct insight into the mining industry, which is an important part of Eritrea's development.



Eritrean National Mining

Company

## Long-term economic, social and community dividends



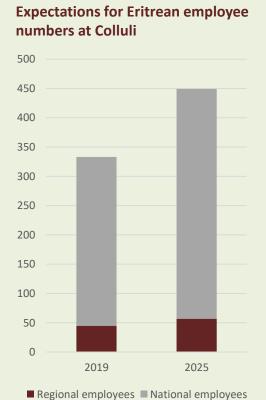
# ENGAGEMENT WITH COMMUNITY AND KEY STAKEHOLDERS HAS GENERATED STRONG SUPPORT FOR COLLULI DEVELOPMENT











nermanent iohs for locals and

Colluli will create over 300 permanent jobs for locals and Eritrean nationals by 2019, and over 450 by 2025

## Highly experienced board





# STRONG OPERATIONAL AND LEADERSHIP TEAM ASSEMBLED WITH A TRACK RECORD OF SUCCESS



Paul Donaldson
CEO and MD
Mining senior management

- 25+ years experience spanning large scale open cut mine management, project management, supply chain logistics, mineral processing, business improvement and marketing
- Formally held a series of senior management positions with BHP Billiton



Liam Cornelius Non-Executive Director Geology and exploration

- Founding Director providing guidance on project generation, fund raising and strategic direction
- 20 years experience in commodity exploration within Australia, Asia and Africa



Seamus Cornelius
Non-Executive Chairman
Corporate law and negotiations

- 21+ years experience in legal and commercial negotiations
- Current Chairman of Buxton Resources, Duketon Mining & Montezuma Mining



John Fitzgerald
Non-Executive Director
Corporate finance and banking

- Managing Director of Optimum Capital, specialising in corporate debt and advice in the mining sector
- Chairman of Atherton Resources (previously Mungana Goldmines) and Director of Northern Star Resources



Tony Kiernan
Non-Executive Director
Commercial law and mining

- 25+ years experience in the commercial law, corporate advisory and government relations within the mining industry
- Chairman of Pilbara Minerals, Venturex Resources and Chalice Gold Mines with previous operations in Eritrea



Zhang Jing Non-Executive Director Strategy and Investment

- Extensive experience in International trading, procurement, and business development
- Qualifications in Economics, International Consultancy and accounting

## Colluli – a standout project



- SOP is a high quality, chloride free potash with limited economically exploitable primary resources
- Colluli is an advanced stage project and is the most fundable, scalable, long life, low operating cost SOP project with access to global markets and is in close proximity to established infrastructure
- Colluli has standout economics relative to peers
- Colluli has unrivalled product diversification potential
- Colluli has significant upside on top of superior economic returns



## **Competent persons statement**



#### Resource statement

The 2015 Colluli Potash Mineral Resource is reported according to the JORC Code and estimated at 1,289Mt @11% K2O Equiv. The Mineral Resource is classed as 303Mt @ 11% K2O Equiv Measured, 951Mt @ 11% K2O Equiv Indicated and 35Mt @ 10% K2O Equiv Inferred. The Competent Person for this estimate is Mr. Stephen Halabura, M. Sc., P. Geo., Fellow of Engineers Canada (Hon), Fellow of Geoscientists Canada, and a geologist with over 25 years' experience in the potash mining industry. Mr. Halabura is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan, a Recognised Professional Organisation (RPO) under the JORC Code and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code.

The 2015 Colluli Rock Salt Mineral Resource is reported according to the JORC Code and estimated at 347Mt @96.9% NaCl. The Mineral Resource is classed as 28Mt @ 97.2% NaCl Measured, 180Mt @ 96.6% NaCl Indicated and 139Mt @ 97.2% NaCl Inferred. The Competent Person for this estimate is Mr. John Tyrrell, a geologist with more than 25 years' experience in the field of Mineral Resource estimation. Mr Tyrrell is a member of the AusIMM, is a full time employee of AMC Consultants Pty Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code.

Mr. Tyrell & Mr. Halabura consent to the inclusion of information relating to the Mineral Resource Statements in the form and context in which they appear.

#### **Ore Reserve statement**

The November 2015 Colluli Ore Reserve is reported according to the JORC Code and estimated at 1,113Mt @10% K2O Equiv. The Ore Reserve is classed as 286Mt @ 11% K2O Equiv Proved and 827Mt @ 10% K2O Equiv Probable. The Competent Person for the estimate is Mr Mark Chesher, a mining engineer with more than 30 years' experience in the mining industry. Mr. Chesher is a Fellow of the AusIMM, a Chartered Professional, a full-time employee of AMC Consultants Pty Ltd, and has sufficient open pit mining activity experience relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the JORC Code. Mr Chesher consents to the inclusion of information relating to the Ore Reserve in the form and context in which it appears.

In reporting the Mineral Resources and Ore Reserves referred to in this public release, AMC Consultants Pty Ltd acted as an independent party, has no interest in the outcome of the Colluli Project and has no business relationship with Danakali Ltd other than undertaking those individual technical consulting assignments as engaged, and being paid according to standard per diem rates with reimbursement for out-of-pocket expenses. Therefore, AMC Consultants Pty Ltd and the Competent Persons believe that there is no conflict of interest in undertaking the assignments which are the subject of the statements.



