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Value addition in Namibia

The processing steps at the historic Golden Valley mine involved a carbon loading and leaching cycle. Currently, the infrastructure at Otjikoto and Navachab Mines is capable to crush, mill, leach, roast and burn the ore to produce gold bullions. Gold bullions are exported to refineries abroad, e.g. South Africa.





## **Commodity & Host Geology**

The most important gold provinces of Namibia are the Damara Province, Rehoboth Area and the Otavi Mountainland. The majority of the deposits are structurally controlled and associated with shear, thrust and brecchia zones as well as syn-orogenic hydrothermal mineralisations.



Gold mineralisations appear as free gold or are bound to sulphide and bismuth-minerals within carbonate and guartz-vein systems hosted in marbles and siliciclastics (Damara Province and Otavi Mountainland). Only the minority of the deposits occurs in alluvial environments. Furthermore, some gold occurrences are linked to granitic intrusions (Rehoboth Area, mostly only economic as small-scale operations), as well as auriferous peqmatites and quartzites. Several types of base metal mineralisation carry gold that can be extracted as a by-product.

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## Historic mining in Namibia

Historic gold mining mainly took place on a small scale at Otjua/Epako (1937-43, weathered hard-rock and alluvial gravels, Omaruru District), Gamikaubmund (Karibib District), as well as Neuras (1936-38) and Golden Valley (1938-1994) in the Rehoboth District. The Ondundu gold fields (Omaruru District) were an exception to this, where auriferous alluvial and hard-rock deposits were mined on a larger scale between 1924 and 1963. Gold was also recovered as a by-product in base metal mines such as Otjihase, Kombat and Tsumeb.



## Current mining and exploration projects

Apart from the mining and exploration projects listed on the stock exchange (see table), there are several early stage/grassroot exploration projects throughout Namibia but especially clustered in the vicinity of the northeast-southwest striking features of the Damara Sequence and in proximity to active gold and base metal mines.

Project	Status	type	Reserves	Resources	Production
					in 2018
Navachab	Active Mining	Structurally controlled,	46.34Mt @	Measured &	50,335 oz. Au
	since 1989, LOM	syn-orogenic, sheeted	1.29g/t Au	Indicated	or 1,427kg of
	until 2028	quartz veins, free gold;	(estimate	50.79Mt @	Au bullions
		host: metamorphosed	from 2013,	1.05g/t Au	(source:
		shelf sediments	S&P Global)	Inferred	Chamber of
		(marbles, shists, calc-		6.83Mt @	Mines
		silicates)		1.26g/t Au	Namibia)
				(estimate	
				from 2013,	
				S&P Global)	

Otjikoto	Active Mining since 2015, LOM until 2027	Sheeted carbonate and quartz vein system, free gold, associated with shear and thrust zones, structurally controlled, Host: marbles, shist, greywackes, albitite	Probable 19.8Mt @ 1.5g/t Au (estimate from 2018, S&P Global)	Measured & Indicated 18.6Mt @ 0.94g/t Au Inferred 4.2Mt @ 2.27g/t Au (estimate from 2018, S&P Global)	167,346 oz. Au (source: B2Gold) or 4,477kg of Au bullions (source: Chamber of Mines Namibia)
Damara Gold Project	Detailed Exploration; target outline	Structurally and lithologically controlled, veins and shear zone; host: metaturbidites/ shists	To be evaluated, project area 6,687km <sup>2</sup> , 22 EPLs	extensive drilling program (2018: 25 RC, 286 RAB, 18 DD; CoM Nam) with positive results, Au- anomalies 0.5-2.69g/t Au (av. 1g/t) (source: Osino Resources Corp)	-
Ondundu	Detailed Exploration, reserves development	Structurally controlled, mesothermal quartz veins and alluvial; host: metaturbidites		4.5Mt @ 3.387g/t Au (estimate from 2008, S&P Global)	-
Golden Valley	Active Mining License 168, No Production	Shear zone		Inferred 4.1Mt @ 4.05g/t (estimate from 1995, S&P Global)	-

Furthermore, two base metal exploration projects indicate gold as a by-product: Ongombo Copper Project (Prefeasibility/Scoping Stage; 10.5Mt @ 0.32g/t Au, resource estimate from 2012, S&P Global) and Kuiseb Copper Project (Reserves Development, 3.6Mt @ 0.6g/t Au, resource estimate from 2009, S&P Global).