



COLTAN

AUXICO RESOURCES INC.



AUXICO - CAN

The following presentation contains data provided to Canada America Nickel Inc. As such, Canada America Nickel Inc. has taken all reasonable care in reproducing the information herein. Material in this presentation may contain technical or other inaccuracies, omissions, or typographical errors, for which Canada America Nickel Inc. assumes no responsibility. Canada America Nickel Inc. does not warrant or make any representations regarding the use, validity, accuracy, completeness or reliability of any claims, statements or information in this presentation. Under no circumstances, including, but not limited to, negligence, shall Canada America Nickel Inc. be liable for any direct, indirect, special, incidental, consequential, or other damages, including but not limited to, loss of programs, loss of data, loss of use of computer or other systems, or loss of profits, whether or not advised of the possibility of damage, arising from the use, or inability to use, the material in this presentation. The information presented herein is not a substitute for independent professional advice before making investment decisions.

Forward-Looking Statements

This presentation may contain forward-looking statements, including but not limited to comments regarding predictions and projections. Forward-looking statements address future events and conditions and therefore involve inherent risks and uncertainties. Actual results may differ materially from those currently anticipated in such statements.



» WHAT IS COLTAN?

Definitions, mineralogy and deposits

Definitions and characteristics

Niobium (Nb) and tantalum (Ta) are transition metals with very similar physical and chemical properties, and are thus commonly grouped together (Table 1). Niobium was discovered in 1801 by Charles Hatchett, and was originally named 'columbium'; it was subsequently also recognised by a German chemist, Heinrich Rose, who named it 'niobium'. The names were used interchangeably for some time, before 'niobium' was finally accepted in 1949.

Tantalum was discovered in 1802 by a Swedish scientist, Anders Ekeberg.

Niobium is a shiny, ductile metal with a white lustre. Naturally-occurring niobium consists almost exclusively of the isotope ^{93}Nb ; natural tantalum is mainly ^{181}Ta , with 0.012 per cent ^{180}Ta . A number of other radioactive isotopes of both elements have been synthesised.

The overall abundances of niobium and tantalum in the average continental crust are relatively low, niobium having an abundance of eight parts per million (ppm) and tantalum of 0.7 ppm (Rudnick and Gao, 2004). Compared to other metallic elements such as the light rare earths, niobium and tantalum are rather depleted in the continental crust. This can be attributed to the fact that much of the continental crust was formed at convergent margins above subduction zones, and that magmas formed in this setting are typically depleted in both niobium and tantalum.



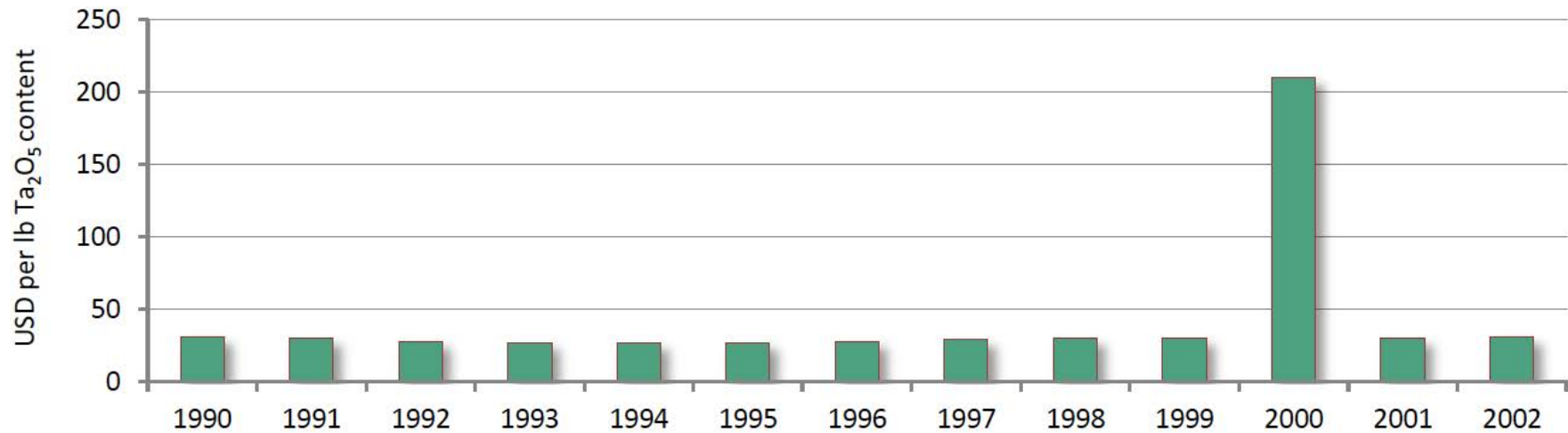
AUXICO - COLTAN IN SITU VALUES

AUXICO RESOURCES CANADA INC. SAMPLE RESULTS AND ECONOMICS FROM COLOMBIA AND VENEZUELA						
Sample V - M-8355_1	kg Ta	kg Nb	kg Sc	kg Sn	kg TiO2	TOTAL
Grade (in kg)	79,70	23,60	3,20	720,80	45,40	
Market Prices (USD per kg)	\$186	\$50	\$4.000	\$19	\$1,7	
In situ value (USD)	\$14.824	\$1.180	\$12.800	\$13.695	\$77	\$42.577
Sample C - M-8355_2	kg Ta	kg Nb	kg Sc	kg Sn	kg TiO2	TOTAL
Grade (in kg)	10,30	37,80	0,00	0,00	490,20	
Market Prices (USD per kg)	\$186	\$50	\$4.000	\$19	\$1,7	
In situ value (USD)	\$1.916	\$1.890	\$0	\$0	\$833	\$4.639
Sample C - M-8355_12	kg Ta	kg Nb	kg Sc	kg Sn	kg TiO2	TOTAL
Grade (in kg)	356,60	75,70	6,20	82,90	239,30	
Market Prices (USD per kg)	\$186	\$50	\$4.000	\$19	\$1,7	
In situ value (USD)	\$66.328	\$3.785	\$24.800	\$1.575	\$407	\$96.895
Sample V - M-8355_234	kg Ta	kg Nb	kg Sc	kg Sn	kg TiO2	TOTAL
Grade (in kg)	266,60	77,00	4,20	53,50	233,20	
Market Prices (USD per kg)	\$186	\$50	\$4.000	\$19	\$1,7	
In situ value (USD)	\$49.588	\$3.850	\$16.800	\$1.017	\$396	\$71.651
Sample C - M-8246_7	kg Ta	kg Nb	kg Sc	kg Sn	kg TiO2	TOTAL
Grade (in kg)	351,50	396,30	0,00	0,00	39,20	
Market Prices (USD per kg)	\$186	\$50	\$4.000	\$19	\$1,7	
In situ value (USD)	\$65.379	\$19.815	\$0	\$0	\$67	\$85.261
Sample C - M-8246_8	kg Ta	kg Nb	kg Sc	kg Sn	kg TiO2	TOTAL
Grade (in kg)	311,40	369,90	0,00	0,00	33,30	
Market Prices (USD per kg)	\$186	\$50	\$4.000	\$19	\$1,7	
In situ value (USD)	\$57.920	\$18.495	\$0	\$0	\$57	\$76.472

» FROM COLTAN TO CAPACITORS

The more valuable metal in the coltan ore is Tantalum (Ta), with demand having grown at around 5 % per annum since 1990. There was a spike in prices during the last phase of the dot-com boom, which drew attention to coltan mining in eastern DRC (see Figure 1).

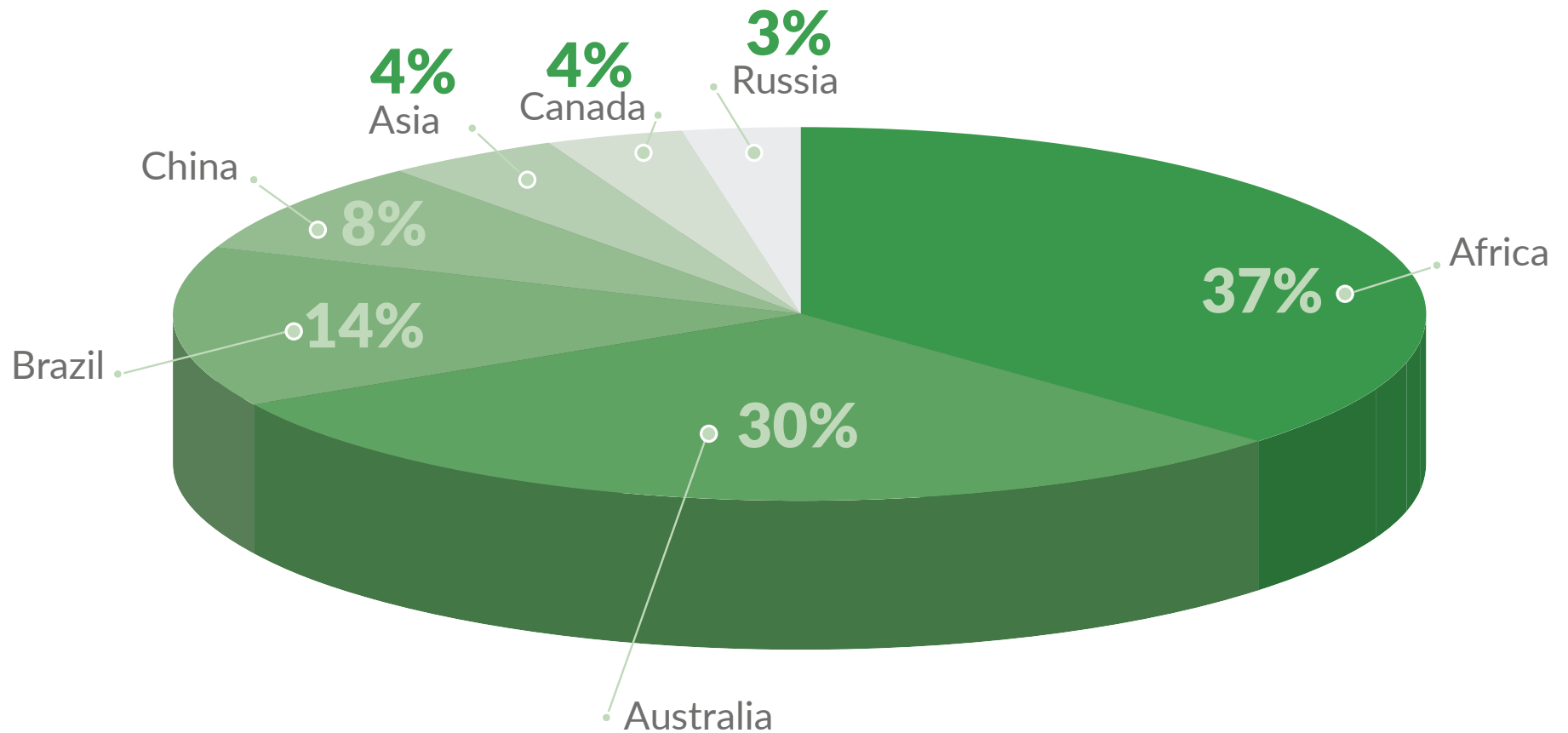
Figure 1: Average year-end prices for Tantalite



Primary production of tantalum in 2008 was 4.3 million lbs of Ta₂O₅ (see Figure 2), with a further 1.7 million lbs obtained from scrap and tin slag, to meet total demand of 6.0 million lbs. Reserves are distributed somewhat differently from production, reflecting the costs of extraction. It is estimated there are several decades of production in the ground, depending on the market price, the extraction and processing costs, and the levels of recycling.

» FROM COLTAN TO CAPACITORS

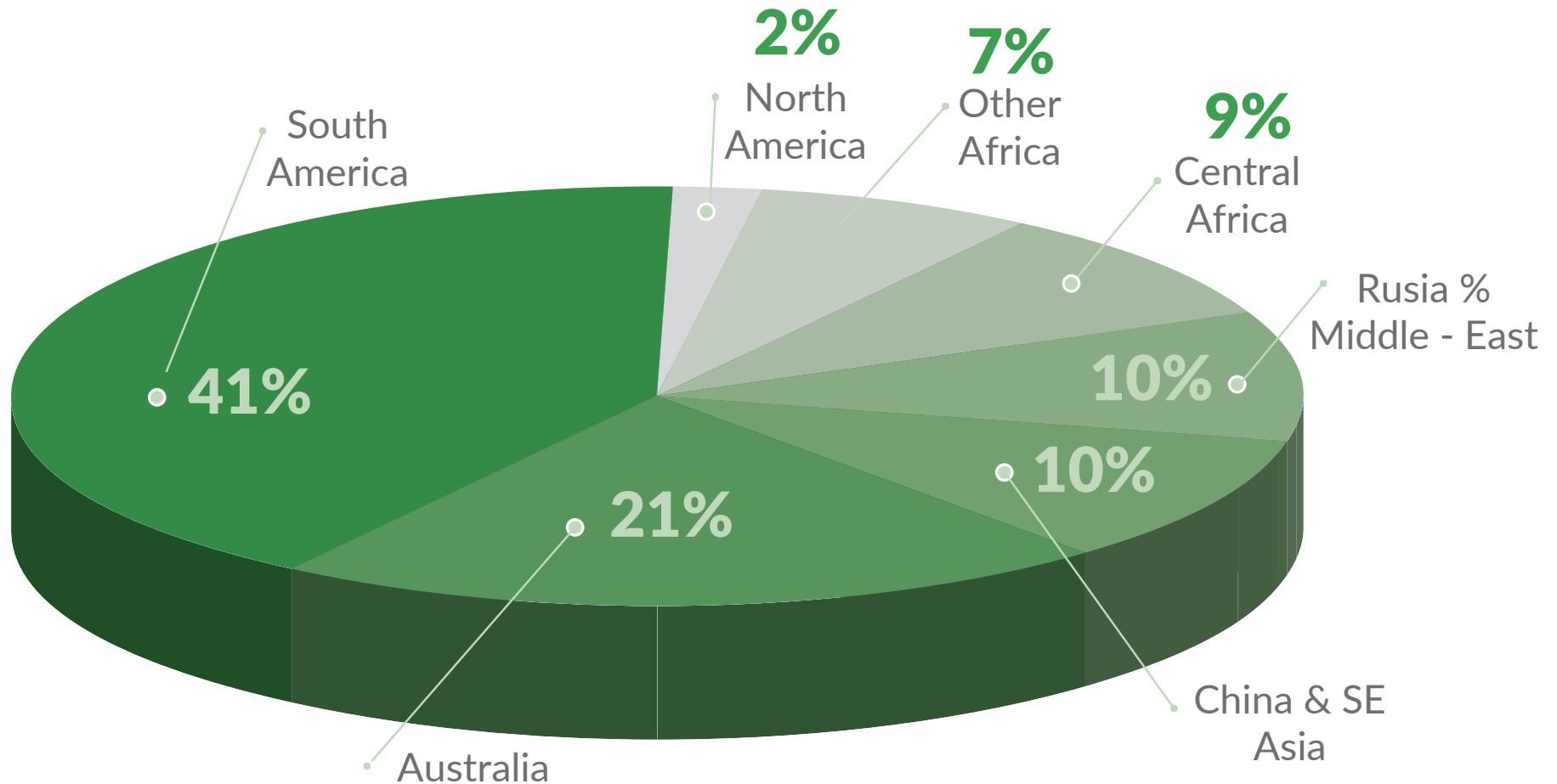
Figure 2: Tantalum primary production in 2008



(Source: Talison)

» FROM COLTAN TO CAPACITORS

Figure 3: Estimated world reserves (698 million lbs Ta)



(Source: TIC)

» TANTALITE ORE PRICE

185 USD/ kg (● 31 May - 2018)



CHALLENGES WITH CONFLICT MINERALS

Coltan The Cost of Africa's Black Gold

For centuries Africa has been exploited for its many precious resources. Recently the world's demand for a mineral ore called 'coltan' combined with specific political events and subsequent conflicts have lead to particularly deplorable situations in the Democratic Republic of Congo.

Coltan is a mineral ore from which the element tantalum is extracted. Tantalum is a superconductor and is used to make ultra compact capacitors for use in ever shrinking electronic components such as mobile phones, computers, gaming and digital music devices. Around the time when the global market began to peak for these products the Democratic Republic of Congo was gripped in a gruesome series of coup d'états which locked the country in civil war. Situations worsened as rebel forces and government troops moved in from nearly all bordering countries to side with either the waning central government or 'Real' in Congolese Democracy and 'Movement for the Liberation of Congo' rebel uprisings. Rebel forces were quick to take control of coltan mining operations since these were newer, smaller, and less established than diamond, uranium and gold mines in the area. Rebels have used profits to fund arms purchases and pay troops. Eventually in 2001, peace agreements and cease fires were signed but since rebel forces in control of mining operations are reluctant to give them, up many areas still remain hostile and the plight of the Congolese people continues to worsen.



RESOURCE REPORT

In natural resources our conflict in Congo today:

- bauxite
- aluminium
- cadmium
- calcite
- coal
- coltan
- copper
- COPTAN
- diamonds
- gas
- gold
- iron ore
- lead
- management
- oil
- silver
- timber
- uranium
- zinc

The coltan ore export path through Uganda masks the origin of material and makes tracking it nearly impossible for distributors. Because of the gap in information it is nearly impossible for refiners to claim that they buy no coltan obtained from conflict areas.

THE MINING PROCESS

The first stage in preparing an area for mining is to clear-cut a swath of jungle. Areas which were once farmed are being mined or have been abandoned by the farmers as most able bodied men are now either soldiers or miners. The agricultural vacuum left by this shift in occupation leaves many villages malnourished and often starving. Endangered species living in remote areas are often killed in the process of clearing or later hunted for food.

At the mining sites, large pits with very little structural support are dug. The work is backbreaking and dangerous. Since the mines are flooded to soften and sort the earth, cave ins occur often. Mines are usually guarded by the controlling military force in the area as raids by other rebel militant groups are also common. Many miners are mere children aging from as young as 11 years old. It is estimated that over 30% of school age children have left school to work the mines. Rebel forces as well as the government's army have been known to recruit pre-adolescents to fight in bloody conflicts.

After a significant trench or pit has been excavated, the removed material is flooded and panned out by hand to sort the coltan from the earth. The miners hand over their findings for the day to the guarding rebel soldiers and from there the coltan is usually shipped out through one of the countries neighboring the D.R.C. to avoid export taxes and general suspicion of illegal operations. The Rwandan/ Ugandan backed rebel group RCD (Rally for Congolese Democracy) claimed a profit of \$2 million per month from coltan mining in 2001.

\$ 500/lb

\$ 100/lb

\$ 90/lb

\$ 100/lb

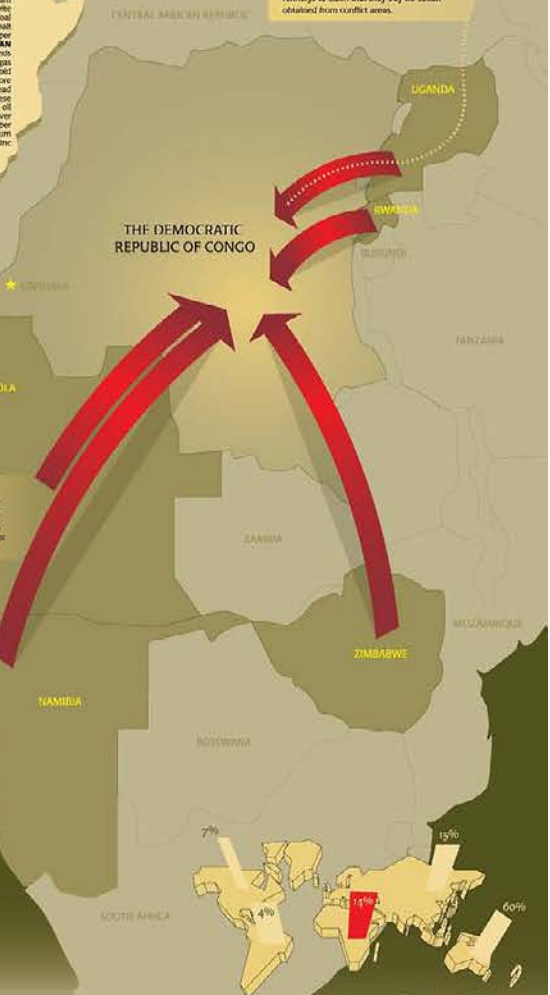
1975 1980 1985 1990 1995 2000 2005

1973-74 President Mobutu renames Congo as 'Zaire'. He also nationalizes many foreign-owned firms which leaves European investors out of the country and hampers infrastructural development projects.

1990 Zaire defaults on loans from Belgium, resulting in a cancellation of development programmes and increased deterioration of the economy.

The global market price for raw tantalum rose sharply due to the ever increasing demand for small electronics. This price drop again sharply in 2003 but has been gaining since.

1997 The government of D.R.C. is overthrown by rebel groups backed by Rwanda. The new regime installed at this time lasts only one year and then is again opposed by rebel forces, this time backed by both Rwanda and Uganda. Angola, Zimbabwe, and Namibia send troops to support them. Each of these invading forces begins to take hold or mine in their areas of control, which most these forces further the proliferation of violence and other mining activities in recent peace agreements.



Although we can see that only 14% of the world supply of coltan (tantalum ore) comes from Africa this is the only portion which causes concern since other countries are not tracked in the same way as being tracked by the sale of the mineral.



CIVIL WAR
A comparison of related deaths resulting from the US civil war and the war in the D.R.C.

DEADLIEST DAY
A comparison of lives lost in US national tragedies to the number of deaths occurring in a daily basis in the Democratic Republic of Congo.

HUMANITARIAN REPORT
Health Crisis
Estimations state that HIV/AIDS 200,000 infected Congolese people in 2001.

Rape
At least 40,000 survivors of sexual and gender-based violence in Congo.

Uprooted by Violence
Almost 1.7 million people were displaced by end of 2005.

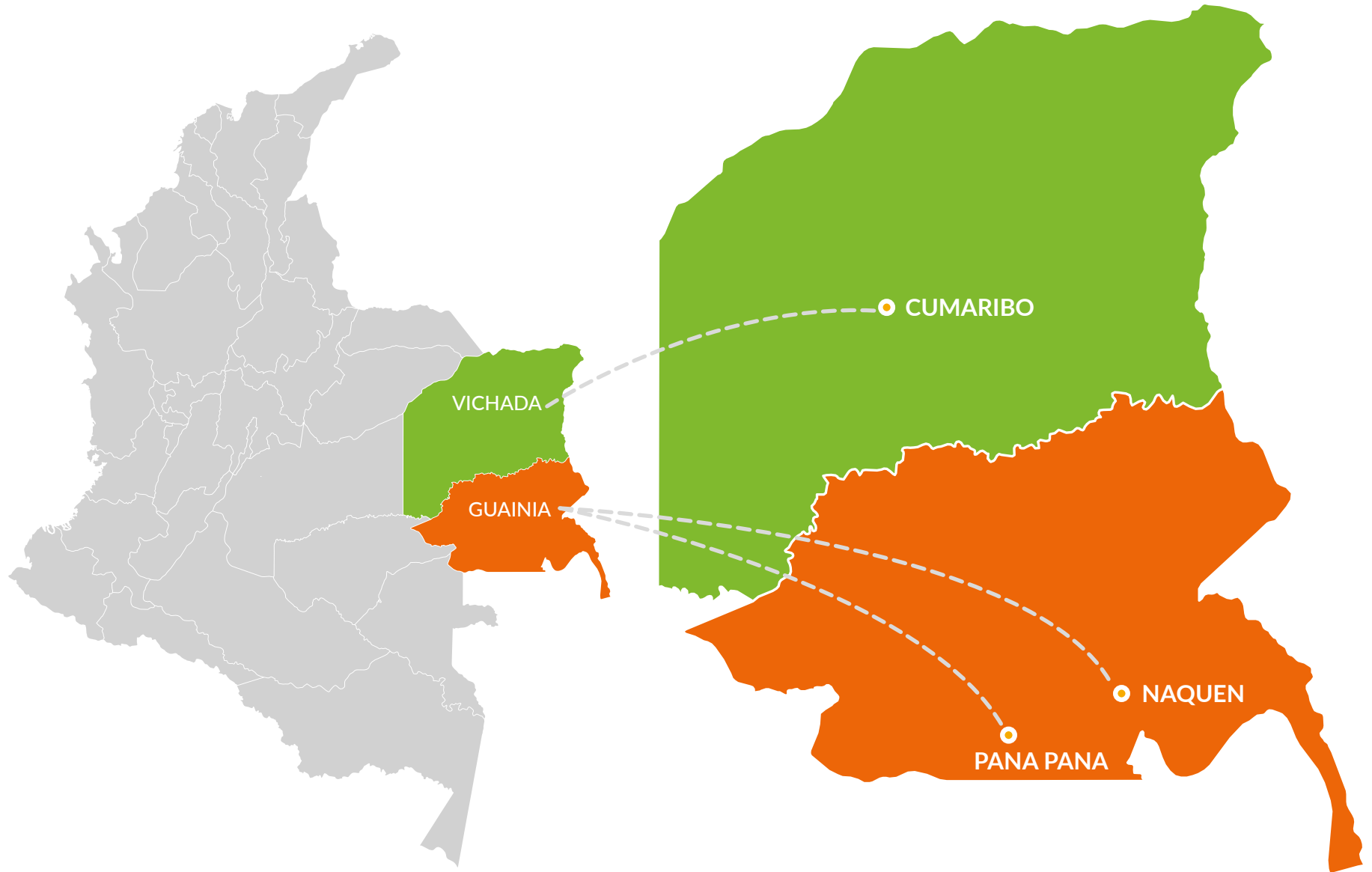


COLOMBIA

Pana Pana - Colombia



POTENTIAL INVESTMENT AREAS





VENEZUELA

Piedra El Elefante - Bolívar State

» A NEW COLUMBITE-TANTALITE FRONTIER?

Venezuela has vast proven oil and gas reserves and for most of the twentieth century it was a major oil exporter and leading member of the Organization of the Petroleum Exporting Countries (OPEC). However, as with the United Arab Emirates and Saudi Arabia, Venezuela is said to be conscious of the need to diversify its economy away from a dependency on oil revenues and so has started paying more attention to its other natural resources, including tantalite-columbite ('coltan') minerals. In Venezuela economic diversification has been made all the more urgent by falling oil production at the state-owned producer Petróleos de Venezuela S.A. (PDVSA) over the last decade, combined with high domestic inflation¹ of the Venezuelan bolívar.

In 2016 the Venezuelan government under President Nicolás Maduro made three major policy changes to the mining sector:

1. In January it launched the Bolivarian Economic Agenda which includes a 'Mining Engine' with the explicit goal of realising the economic potential of its mineral resources.
2. In February it created the Arco Minero del Orinoco (AMO) (in English the Orinoco Mining Belt or Arc) in Bolivar State as a National Strategic Development Zone for mining. This territory is said to represent 12% of all of Venezuela's government-owned land and will be the focus for new mining activity. Note that within each of the four areas exist many legally-protected environmental and indigenous territories.
3. In June governance of mining was taken away from the oil ministry and installed at the newly formed Ministry of People's Power for Ecological Mining Development (MPPDME, in Spanish²).



"Coltan Country", the Parguaza River, Bolivar State, Venezuela

The new mining opportunities are open to private, public and mixed companies, as well as the participation of small-scale mining.

Under the new policy, all exploitation of mineral resources must be done to the highest standards of environmental harmony and human rights, which is appropriate for a territory with incredible biodiversity and many protected indigenous populations.

» THE ARCO MINERO DEL ORINOCO (AMO)

The Arco Minero del Orinoco is located south of the Orinoco River, in the northern part of the state of Bolívar. It has a total area of 111,844 km², organized internally in four areas for the purpose of development and administrative organization.

However, it is said that only 5% of the AMO will experience exploration and exploitation activities, and just 1.5% will experience mining activity once the exploration stage is completed. Of the four areas, columbite-tantalite minerals are mostly concentrated in Area 1, the most westerly of the four, close to the border with Colombia, but have also been found in Area 3 and Area 4.

Tantalum and niobium in Venezuela

Niobium, tantalum and tin minerals in Venezuela constitute the classic columbite-tantalite (coltan) (columbite-tantalita, in Spanish) mineralizations associated with granitic and pegmatitic complexes. The northeast zone of the Amazonas state and the southwestern region of the municipality of Cedeño, Bolívar state, constitute one of the most interesting metallogenic areas of niobium and tantalum in the country.

Currently, there is no determination of the reserves of columbite and tantalite (coltan), but previous studies carried out by the National Institute of Geology and Mining (Ingeomin) have defined the following deposits of columbite-tantalite with the objective of carrying out prospecting and exploration activities for their subsequent certification of reserves:

- Aguamena- Boquerones-Villacoa sector,
- Cerro Impacto,
- Guaniamo,
- Cuao River sector,
- Cerro Delgado Chalbaud (Black River).



A map of Venezuela showing the four new mining areas in the Arco Minero del Orinoco; inset: South America showing Venezuela (orange) (Images: MPPDME, Google Maps)



Tantalite-containing mineral samples from Venezuela

A NOTE FROM THE T.I.C. ARCHIVES REGARDING

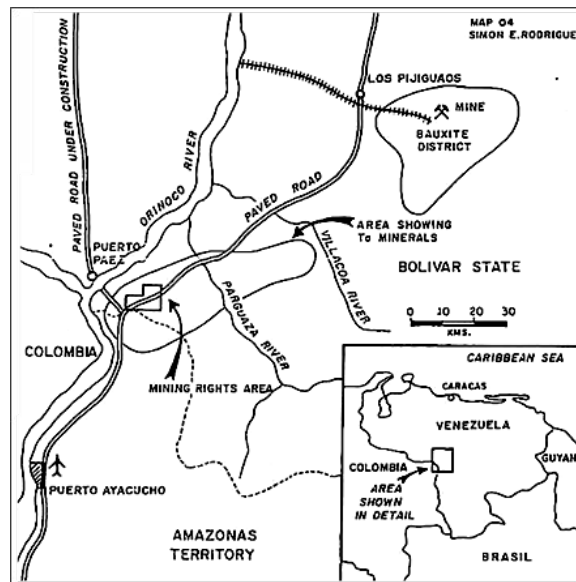
» VENEZUELAN COLUMBITE-TANTALITE

In Bulletins #52 (November 1987)³ and #67 (September 1991)⁴ Dr Simon E. Rodriguez, then of the Geological Survey of Venezuela (forerunner to Ingeomin), wrote about a large granitic formation located in the western-most part of Bolivar State, that had shown an important Ta-Sn-Nb mineralization in numerous large complex pegmatites. The geomorphology of this area is characterized by large plains, consisting of savannas and smooth hills. Pegmatites had been found in some hills and in addition secondary eluvial deposits located near the pegmatite bodies showed high concentrations of Ta-Sn-Nb minerals. Initial tests on the ore of the Parguaza Ta-Sn-Nb district produced a concentrate with a Ta₂O₅ content ranging between 25 and 42 per cent. It is worth noting that Dr Rodriguez's map (see below) and OMB Area 1 show a very close approximation.

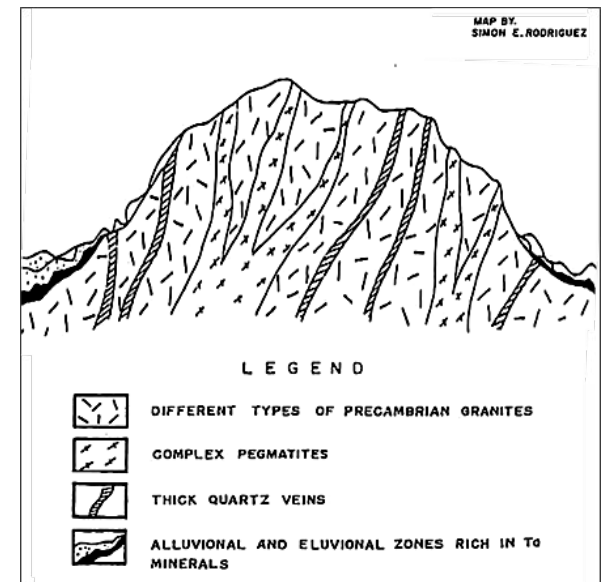
In 2010/11 these pegmatites were explored again⁵, this time by a team of geologists from Venezuela's Central and Oriente Universities and state-owned mining group CVG Bauxilum. Of their 39 samples 8 were confirmed to contain columbite and tantalite minerals, including struverite, ferrowodginite, titan-wodginite, and ferrocolumbite. Minerals containing rare earths, titanium and tin were also recorded.



Pegmatite rock formations in the Parguaza Mountains, region is locally known as "Coltan Country".



The tantalum district of south western Venezuela, near the confluence of the Paraguaza River with the Orinoco River (credit: Dr Rodriguez)



A generalised cross section of mineralized areas in the Parguaza Region (credit: Dr Rodriguez)



CAN SIGNED A JOIN VENTURE AGREEMENT WITH AUXICO



CAN's Technology – Ultrasound Assisted Extraction (UAE): CAN has developed a patent pending technology for the production of energy metals within 1 hour, under ambient temperature and without the use of pressure. Tests conducted by 3 separate labs on material originating from Guatemala, Cuba, Dominican Republic, USA, Burundi and Ivory Coast, have resulted in the recovery of more than 95% of nickel, cobalt, manganese and scandium within only one hour, under ambient temperature and without the use of pressure. In addition, vanadium, titanium, copper and iron, can also be recovered within an hour with an 80% recovery.

This process will dramatically reduce capital and operating cost and give CAN a major competitive advantage, as most known metallurgical processes that use sulfuric acid, cyanide or hydrochloric acid do so in a 24-hour cycle.



BOARD OF DIRECTORS

AUXICO RESOURCES CANADA INC.

» BOARD OF DIRECTORS



Pierre Gauthier
Chairman of the Board and CEO



Mark Billings
President



Marc Filion
Board Member



Rick Whittaker
Board Member



Bernard Jun He
Board Member



Salvador Brouwer
Board Member



» Auxico Resources Canada Inc.

Keep in touch with us:

📍 **Address**
230 Notre Dame West
Montreal QC, CANADA H2Y 1T3

Pierre Gauthier, Chairman & CEO

✉ pg@auxicoresources.com
+1 514 299 0881

Mark Billings, President
✉ mb@auxicoresources.com
+1 (514) 296-1641

Jorge Diaz, Vice President
✉ jd@auxicoresources.com
+1 (514) 710-2805

Joel Scodnick, B.Sc., P.Geo.
✉ js@auxicoresources.com

Pilar Acosta, Legal and Corporate Affairs
✉ pa@auxicoresources.com

For more info, please visit:
www.auxicoresources.com



www.auxicoresources.com