



Coltan Mining in the Democratic Republic of Congo:

How tantalum-using industries can commit to the reconstruction of the DRC

Karen Hayes & Richard Burge



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“Let us choose to unite the power of markets with the authority of universal ideals. Let us choose to reconcile the creative forces of private entrepreneurship with the needs of the disadvantaged and the requirements of future generations.”

*Kofi Annan, Secretary-General of the United Nations
The Global Compact, Corporate Leadership in the World Economy*

“Because the economic dimensions of civil war have been largely neglected, both governments and the international community have missed substantial opportunities for promoting peace”.

*Paul Collier, former Director, Development Research Group World Bank
Economic Causes of Civil Conflict and their Implications for Policy*

“Making the riches of the DRC work for its people and not against them is a vital factor in achieving sustainable peace and development in the Great Lakes region, and a question that the All Party Parliamentary Group has been concerned with for some time. I am therefore delighted to offer my support to this original and important contribution to the debate.”

*Oona King MP, Chair of the UK All Party Parliamentary Group on
The Great Lakes and Genocide Prevention*

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In memory of Karl Ruf, Jean Nlamba and Kambale Saambili. The legacy of their commitment to conservation will live on.

List of Abbreviations

ADFL - Alliances des Forces Démocratiques pour la Libération du Congo-Zaire (Alliance of Democratic Forces for the Liberation of Congo Zaire). Forces that backed Laurent-Désiré Kabila's rise to power in 1997.

ALIR - Armée pour la Libération du Rwanda (Army for the Liberation of Rwanda) Consists of the Interahamwe and ex-FAR.

AWF - African Wildlife Foundation Conservation NGO founded in 1961. Works in eight countries to preserve African wildlife and wild lands. Headquarters in Nairobi.

CBV - Community Business Venture Development and investment initiatives to stimulate, mentor and support local businesses.

CSR - Corporate Social Responsibility

DDRRR - Disarmament, Demobilization, Repatriation, Reintegration and Rehabilitation Programme aimed at armed militias in the DRC.

DFGF - Dian Fossey Gorilla Fund Mountain gorilla conservation NGO.

DRC - The Democratic Republic of Congo, formerly Zaire.

ECA - Electronic Components, Assemblies & Materials Association

FAC - Forces Armées Congolaises Congolese government forces controlled by the President in Kinshasa.

ex-FAR - former Forces Armées Rwandaises

FDD - Forces pour la Défense de la Démocratie (Forces for the Defence of Democracy) Burundian rebels, partly based in the DRC, opposed to the Burundian government.

FLC - Front de Libération du Congo Temporary alliance between the two rebel groups backed by Uganda (MLC in north/north-west and RCD-ML in north-east).

FFI - Fauna & Flora International International conservation NGO founded in 1903. Works to conserve endangered habitats and species. Specialist experience in working with the private sector and operating in conflict and post-conflict zones. Headquarters in Cambridge, UK.

GeSI - Global e-Sustainability Initiative Initiative of information and communication technology service providers and suppliers, with support from the United Nations Environment Programme and the International Telecommunication Union. Through GeSI, the industry aims to help improve the global environment and to enhance human and economic development, thereby making a key contribution to a global sustainable future.

GSM - Global System for Mobile communication

GPS - Global Positioning System

HRW - Human Rights Watch International NGO dedicated to protecting human rights around the world.

ICCN - Institut Congolais pour la Conservation de la Nature Congolese environment ministry and national park authority.

IGCP - International Gorilla Conservation Programme Mountain gorilla conservation programme established by FFI, AWF and WWF. Works in transboundary Virungas National Park with park staff from Uganda, Rwanda and the DRC.

IMF - International Monetary Fund One of the Bretton Woods institutions. Established in 1945 and headquartered in Washington, DC. Exists to promote international trade, monetary co-operation and the stabilization of exchange rates.

IPT - Independent Projects Trust Conflict resolution NGO based in Durban, South Africa.

IRC - International Rescue Committee Non-sectarian, voluntary organization, founded in 1933. Provides relief, protection and resettlement services for refugees and victims of oppression or violent conflict.

IUCN - World Conservation Union Umbrella body for conservation organizations worldwide and centre of international conservation policy. Headquarters in Gland, Switzerland.

KBNP - Kahuzi-Biega National Park UNESCO World Heritage Site in eastern DRC, which is no longer under the control of park authorities as it is occupied by coltan miners and militia.

MLC - Mouvement de Libération Congolais Uganda-backed Congolese rebel authorities controlling areas in the north and north-west of the DRC.

List of Abbreviations

MMSD - Mining, Minerals & Sustainable Development Sub-group of the International Institute for Environment & Development, currently developing a global report on mitigating the environmental impacts of mining.

MONUC - United Nations Organisation Mission in the Democratic Republic of Congo UN peacekeeping forces mandated to monitor the ceasefire, supervise disengagement and disarmament, demobilize child soldiers, organize the removal of mines and unexploded ordnance and facilitate the national peace dialogue.

MOU - Memorandum Of Understanding

NGO - Non-Governmental Organization

OECD - Organization for Economic Cooperation and Development

RBM - Ranger Based Monitoring Conservation and habitat monitoring and research carried out by national park guards.

RCD-Goma - Rassemblement Congolais pour la Démocratie (Rally for Congolese Democracy), based in Goma. Rwandan-backed Congolese rebel authorities controlling areas in eastern DRC.

RCD-ML - Rassemblement Congolais pour la Démocratie – Mouvement de Libération (Rally for Congolese Democracy – Liberation Movement). Ugandan - backed Congolese rebel authorities controlling areas in north-east DRC.

SAP - Species Action Plan Coordinated plan of research, conservation actions, policy building and stakeholder dialogue to ensure the conservation of a particular species.

SOG - Sons of Gwalia World's largest tantalum producing company. Accounts for over 60% of global supplies, with significant expansion planned. Material sold in advance, on long-term, fixed price contracts to two processing companies, H.C.Starck, Germany and Cabot Corporation, USA.

3G - Third Generation (Mobile phones)

TIC - Tantalum-Niobium International Study Center Brussels-based international association of companies involved in producing, processing and purchasing tantalum and niobium. Collects and dispenses information. More than 80 members.

UNDP - United Nations Development Programme

UNESCO - United Nations Educational, Scientific and Cultural Organization Paris-based UN agency, set up in 1945 to promote the exchange of ideas, information and culture.

UN FAO - United Nations Food & Agriculture Organization UN agency concerned with food production and supply, especially with regard to food security in poor or compromised nations.

UNHCR - United Nations High Commission for Refugees UN agency concerned with displaced persons and asylum seekers.

UNICEF - United Nations Children's Fund New York-based UN agency, established in 1946 to help governments, especially in developing countries, improve the health and education of children and their mothers.

UNITA - União Nacional para a Independência Total de Angola (National Union for the Total Independence of Angola). Angolan nationalist movement founded in 1966 by Jonas Savimbi (died February 2002). Implicated in trading in 'blood' or 'conflict' diamonds.

UNSC - United Nations Security Council UN body bearing primary responsibility for the maintenance of peace and security, which may call on members to take military or economic action to enforce its decisions.

UPDF - Uganda People's Defence Force Ugandan government army.

WBCSD - World Business Council for Sustainable Development Swiss-based coalition of 150 international companies united by a shared commitment to sustainable development via economic growth, ecological balance and social progress.

WCS - Wildlife Conservation Society International NGO, based at the Bronx Zoo. Combines the resources of wildlife parks in New York with field projects around the world.

WSSD - World Summit on Sustainable Development Earth Summit held in Johannesburg, South Africa in September 2002.

WWF - World Wide Fund for Nature International NGO established in 1961. Works to save endangered species and habitats.

Glossary

Alluvial Originating from rivers or flood plains

Boulonneurs Miners

Bushmeat Wild meat, any wild animal hunted for food

Capacitor charge Device of one or more pairs of conductors separated by insulators, used to store an electrical charge

Chef de colline Literally 'chief of the hill'. Local authority in Rwanda and eastern DRC

Coltan African name for an ore containing columbium (or niobium) and tantalum, hence the name 'col-tan'. Black, metallic grit that occurs in alluvial (or riverine) deposits and is obtained by panning, as if for gold

Comptoirs Licensed mineral traders

Creuseurs Miners

(Le) Gosse Coltan is measured by the dessert spoon, four of which fit into a small condensed milk tin. Originally the condensed milk brand name, 'le gosse' is now used to refer to the tin itself

Interahamwe Civilian militia of the army of the Rwandan Hutu regime that carried out the genocide of Tutsis in 1994. After the genocide, fled to the DRC where they act as lawless, roving militia with loose

allegiance to the DRC government troops. Seek to overthrow Rwanda's 'unity' government, reinstate Hutu control and, possibly, complete the genocide

Kadogos Swahili for 'the little ones'. Refers to child soldiers

Lusaka Accord Ceasefire Agreement for a cessation of hostilities between all belligerent forces in the DRC, signed on 10 July 1997 in Lusaka, Zambia by the DRC, Angola, Namibia, Rwanda, Uganda and Zimbabwe

Mai Mai Generic name for various groups of Congolese warlords, tribal chiefs and resistance groups totalling tens of thousands of fighters, engaged in warfare against occupying forces and rebel authorities in eastern DRC

Negotiateurs Traders

Spot market Dispersed market in which prices are determined on a transaction-by transaction basis

Tantalum Rare, blue-grey metallic mineral, atomic number 73. Dense, durable, resistant to corrosion and heat, with capacity to store and release an electrical charge

World Heritage A natural or man-made site, area or structure recognized as being of outstanding international importance and therefore worthy of special protection

Foreword

At the time of publication there is a window of opportunity to help the long-suffering population of the Democratic Republic of Congo (DRC). This is a country rich in minerals, income from which should be supporting the reconstruction of a war-torn country.

This report gives a factual background to the extraction of coltan, its refining to tantalum metal and its ultimate use in many different types of equipment. The report has been researched and written by Fauna & Flora International (FFI). Its publication has been funded by the Global e-Sustainability Initiative (GeSI).

In commissioning this work GeSI chose not to take the easy approach of supporting a ban on the use of coltan, but rather to support the development of a controlled trading system. In particular we would welcome a positive and transparent economic intervention that will, under the national and

international frameworks for reconstruction of the DRC, support local livelihood development, social stability, economic regeneration and conservation benefit.

Achievement of this objective will require support from, and more particularly partnership between, all parties of the tantalum supply chain – from refiners to end users, as well as international institutions and appropriate non-governmental organizations.

Members of GeSI are ready and willing to play our part in such an initiative and we call on an appropriate international organization, independent of any particular industry sector, to take the lead in making this happen. GeSI will continue to support FFI's work in this area and members of GeSI will work with companies in their own supply chains to ensure that they address this issue.

Chris Tuppen

Chair, Global e-Sustainability Initiative

Executive Summary

Tantalum is a rare, valuable, metallic element that is twice as dense as steel and highly resistant to heat and corrosion. It can store and release an electrical charge, a property that has made it a vital material for capacitors in miniaturized and portable electronic equipment including mobile phones. Other applications include surgical equipment, turbine blades for jet engines and lining chemical reactors.

It is mined in several countries with Australia responsible for over 60% of world production. All of the production of the largest mines is sold, in advance, on fixed price contracts to key tantalum processors. There is no central market for tantalum and, with the exception of the major mine-processor contracts, prices are determined by dealers on an individual transaction basis.

In 2000, increased demand for new electronic products caused a tantalum supply shortfall, precipitating a rush of panic buying and a massive price increase. In the Democratic Republic of Congo (DRC) this became a Klondike-style rush into the World Heritage Site National Parks where 'coltan', a tantalum-bearing gravel ore, can be easily surface-mined with shovels and sieves. The mines are in rebel-held areas of the war-torn, impoverished DRC where warring factions are responsible for humanitarian atrocities and neighbouring countries have been accused of human rights abuses on an unprecedented scale as a cover for systematic exploitation of minerals. The mining camps had a massive impact on local wildlife through commercial hunting for food, including the wholesale killing of endangered species such as Grauer's gorilla, which now faces extinction.

An Expert Panel of the United Nations Security Council has published four reports since 2001 on the illegal exploitation of natural resources in the DRC. The third report, in October 2002, clearly states that the private sector must accept some responsibility for contributing to this resource-based conflict through the purchase of illegally mined material – the spoils of war. The panel has continued with its investigations, and submitted a further report in the autumn of 2003.

Following significant media coverage, public concern focused on the highest profile consumers of tantalum and, as a result, the mobile telecommunications industry became the centre of attention.

The panic-buying boom was followed by a tantalum market slump in 2001. The plummeting prices were not, as widely reported, due to international pressure to boycott Congolese coltan nor to the development of alternatives to tantalum, but rather due to companies working off their expensive inventories – they simply didn't need to buy it. Despite significant planned expansion of Australian mining capacity, demand for tantalum is likely to continue to grow at a steady rate that may again outstrip supply. Hence, sources such as the DRC will remain strategically important. Most importantly, while there has been a short-term slump in the price of coltan from the DRC, coltan remains a key resource in the eastern part of the country where conflict has continued between different warring factions. The impact on human populations, and the environment, is devastating.

Two options are considered: (1) banning the trade in coltan from the DRC, or (2) regulating coltan mining and export. Companies can boycott Central African tantalum, which is the easiest and safest option, particularly in terms of public relations. There is no need to purchase Congolese coltan at present due to large inventories still being used up after the panic-buying phase. Due to smuggling and the nature of the world market, however, it is almost impossible to guarantee that shipments of ore purchased on the 'spot' market are free of this 'conflict coltan'. Denials and best intentions may be difficult to substantiate and sanctions may adversely affect this poverty stricken region, which is so desperately in need of investment.

Tantalum-using industries should consider supporting the second option: regulation. A regulated, Congolese, coltan industry would be beneficial for the orderly development of the tantalum market. Tantalum-using industries could encourage tantalum processors to establish a long-term, transparently negotiated business deal with a Congolese coltan collective, which would pay a fair

market price for an ethically sourced product. This option could contribute significantly to the peace process in the region, as business intervention may be a viable route to stability in a conflict that is predicated on economics. This option is far more complex, not least as it raises significant questions about the acceptability and risk of doing business in a war zone. Paradoxically, however, this route could demonstrate greater corporate environmental and social responsibility.

The steps involved in pursuing the concept of regulation of the coltan industry are detailed in this report. It would generate maximum value through collective action, discussed with and approved by international bodies. Implementation would require a commitment to purchase an ethical product (at market price, not at a premium) and the underwriting of development and conservation projects.

Recommendations

1. All tantalum-using industries should recognize that there is undoubtedly a direct relationship between the illegal exploitation of coltan and the conflict in the DRC.
2. Tantalum-using companies, individually or collectively, should determine the level of response to the coltan mining issue that is most appropriate and feasible. The key factors influencing this decision should be:
 - 2a. All user industries bear some responsibility, albeit distant, for the situation.
 - 2b. The issue will recur as Congolese coltan will continue to be traded.
 - 2c. Denials of any purchase are, for the majority, impossible to substantiate.
 - 2d. The UN is seeking routes to resolution and will be responsive to input.
 - 2e. The potential balance between risk, resources and rewards.
3. Rather than being a threat, the coltan crisis can be seen as an opportunity to engage with a complex issue using an innovative approach, which will be an exemplary demonstration of collective corporate social responsibility. Tantalum-using industries can employ their:
 - 3a. Influence: along the supply chain to either conform to a ban or support an exploration of the potential of a regulated coltan mining industry.
 - 3b. Peer pressure.
 - 3c. Political support.
 - 3d. Finances: to support community and conservation projects as part of a greater scheme of investment for stability and development.
4. The most critical issue, now, is timing. Though it was impossible to initiate activities beyond dialogue under previous political conditions, support for the Congolese reconstruction process under the Government of National Unity is now timely and urgent.

To this end we propose that:

 - 4a. An appropriate international organization supporting a partnership approach to corporate social responsibility (CSR), eg the UN Global Compact, should circulate this report widely to tantalum-using industries and other relevant institutions, and hold a meeting to gain wider support for the initiative.
 - 4b. At this meeting a multi-stakeholder group should be formed to advance the initiative.
 - 4c. This group should comprise the Government of the DRC, civil society and non governmental organization (NGO) representatives, the private sector, and international agencies, including the World Bank Mining Unit and the Country Director for the DRC.
 - 4d. The group should correspond directly with the UN Security Council, the UN Development Programme and the UN Panel of Experts to propose the initiative as a component of DRC reconstruction planning.
 - 4e. The group should also correspond directly with government trade and development departments to advise them of the initiative.

Introduction

1

In spring 2001, the electronics and mobile telecommunications industries were suddenly approached by journalists asking what they intended to do about the fact that their products were fuelling a bloody war and destroying endangered wildlife in the DRC. Industry representatives found themselves *“scrambling to limit the potential public relations fallout from an issue that they say totally blindsided them”* (Silva, 2001).

Since 2001, a series of UN Security Council reports has clearly stated that the private sector has played a vital role in the continuation of the war in the DRC. Congolese and international NGOs were pressing for an acceptable response, and headlines like *‘Gorillas being killed to make your 3G phones’* were splashed across the newspapers and the internet (3G Newsroom.com, 2001).

The mining and extraction of ‘coltan’ (a tantalum-bearing ore) in the DRC is at the heart of the debate. While coltan no longer makes such prominent headlines, it remains a key issue for the people and environment of the DRC and the Great Lakes region.

The purpose of this report is to provide an accurate analysis of the real story behind the headlines, to trace its development and key events of the last two years, and to present a range of recommendations as to how relevant industries could choose to respond to the situation.

The report starts with a description of the mineral in question, tantalum, and an analysis of the market conditions that caused its price to escalate wildly in

2000. Whilst the historical situation is described as background, the emphasis of the report is on the current and predicted market for tantalum.

The second section provides a brief on the politics, economy and society of the DRC with particular reference to the key investigative reports that have been published in 2000–2003. Against this socio-political backdrop, the impact of mining coltan is described with regard to the role it has played in the humanitarian and environmental disaster occurring in eastern DRC. The equitable management of natural resources, including coltan, is fundamental to the peace process.

Despite the publicity and the informed reports from the UN, NGOs and civil society, no effective action has been taken by the private sector.

The international private sector could choose to ignore the situation on the grounds that it is too far away and too complicated. There are, however, alternative options. Firstly, companies can endeavour to clean up their supply chain by boycotting Congolese coltan. Secondly, the private sector can support the creation of a regulated coltan mining industry as a catalyst for economic development and political stability.

Within this latter scenario, the position of tantalum-using industries and their potential impact is considered. A framework of options for different levels of engagement is presented along with actionable recommendations. This is a real-time case study of corporate social responsibility on the front line.

2.1. Presentation and properties

Tantalum¹ (Ta) is a rare, grey-blue metal, atomic number 73, which occurs in over 100 minerals as the oxide, Ta₂O₅. The most common form is 'tantalite'. It is often found with other elements such as tin, lithium, titanium, thorium and uranium.

Its high melting (2,996 °C) and boiling (5,425 °C) points confer significant heat resistance. It is highly resistant to corrosion and almost completely immune to chemical attack at temperatures below 150°C.

Tantalum is twice as dense as steel and highly durable. It is also highly ductile and surpasses most other refractory metals in workability and weldability. Other properties are superconductivity and a high co-efficient of capacitance, which means that it can store and release an electrical charge. (Commerce Resources Corp., 2001; Roskill, 1999; Roskill, 2002; SOG, 2001.a; TIC, 2001.a; Uganda Gold Mining Ltd, 2001)

KEY REPORT

Roskill, 2002

The Economics of Tantalum, 8th Edition

¹ In 1801 a heavy black mineral discovered in America was found to contain a new mineral, which was named 'Columbium'. A Swedish scientist named Eckberg, one year later, discovered an oxide of another new element. This was very difficult to dissolve in acids and frustrating to work with so Eckberg named it 'Tantalum' after the Greek God Tantalus, for whom food and water were just out of reach (tantalyzing). In 1884, Rose discovered another element in the Swedish mineral, which he named 'Niobium' after 'Niobe', the daughter of Tantalus. This was found to be identical to Columbium and, although Niobium was officially designated the correct name by the International Union of Pure and Applied Chemistry in 1950, arguments over which name should be used still persist. The two elements were first separated in 1866 by taking advantage of their differing solubilities. (Tantalum-Niobium Study Centre, 2001.a; U.S. Geological Survey, 2001).

2.2. Uses

Tantalum was discovered in 1802 but was not used commercially until the next century when the metal was briefly employed in wire form as lamp filament before the advent of cheap tungsten wire. The 1940s saw the introduction of tantalum to its key role in the production of capacitors and demand for the metal increased dramatically concurrent with the development of radar and military radio communications. Since then, its range of applications has ballooned.

Tantalum capacitors are now found in mobile phones, video cameras, notebook computers, pagers, automotive electronics and playstations where they buffer and smooth the flow of electricity. Tantalum's unique capacitance allows the design of progressively smaller, more powerful and more reliable electronic products. In high-performance integrated circuits, tantalum wafers prevent molecular 'bleeding' in the silicon-copper join.

Tantalum is an important addition to superalloys, particularly those used for turbine blades for jet engines. Tantalum carbide is added to cemented carbides to improve the mechanical properties of metal cutting tools.

High corrosion resistance makes tantalum an ideal material in the fabrication of chemical process equipment, heat exchangers, instrument protection devices, reactor lining, laboratory ware and prosthetic devices. (Commerce Resources Corp.,

2001; Roskill, 1999; Roskill, 2002; Roulston, 2001; SOG, 2001.a; TIC, 2001; U.S.Geological Survey, 2001; U.S.Geological Survey, 2003; Uganda Gold Mining Ltd., 2001).

2.3. Sources of tantalum

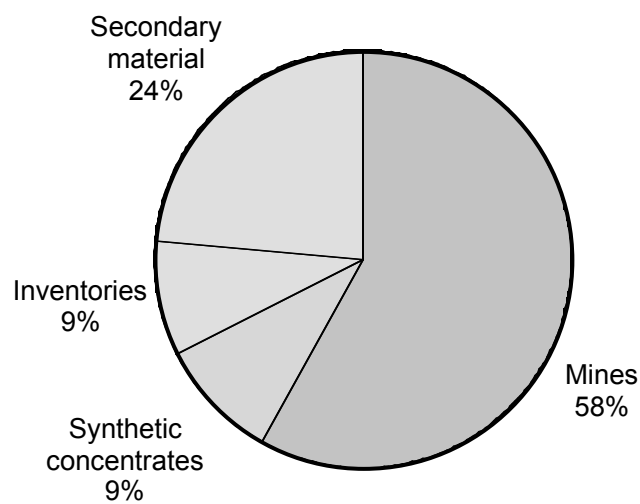
(a) **Mine production (58%)**: mining to obtain tantalum-bearing minerals is carried out in a variety of ways ranging from artisan mining of surface alluvial deposits using pick and shovel in Central Africa, to large-scale open-cut operations in Australia, to underground room-and-pillar mines in Canada. Much of this mining is associated with tin deposits. Mine production of hard rock tantalites has increased in recent years, particularly as alluvial deposits have been worked out (Roskill, 2002).

(b) **Synthetic concentrates (9%)**: in the past, the tantalum associated with tin was considered a nuisance and thus removed and discarded, but increased prices in 1979/80 resulted in the excavation of very large tonnages of tantalum-bearing tin slag from landfill in south-east Asia (TIC, 2001.a). The tin slag is treated to form a 'synthetic concentrate' in which the natural ores are 'concentrated' to increase the percentage of Ta₂O₅ to save on transporting huge weights of quartz or sand that are surplus to requirements (TIC, 2002b). In 1985, this source accounted for around 77% of primary tantalum shipments, but, due to diminishing returns from the decreasing volume and grade of tin slag, this percentage fell to 57% in 1990, 32% in 1995 and its current level of around 20% (Roskill, 1999; TIC, 2002). There is also a problem with radioactive elements in the slag, which inhibit tantalum recovery (Roskill, 2002).

(c) **Recycling (24%)**: about a quarter of tantalum production is recycled from processors' own internal waste, consumer scrap and tantalum-bearing residues. 2-5% of tantalum remains in concentrates after chemical extraction and these residues are added to tin slag and treated a second time to reclaim 'internal' scrap. 'External' scrap refers to tantalum reclaimed from cemented carbides and the electronics industry (TIC, 1996).

(d) **Stockpiles (9%)**: from 1952-1958, the US Government pursued a worldwide programme of purchasing tantalum with the intention of encouraging increased prospecting for and production of columbium-tantalum ores and concentrates (Cunningham, 1998; Uganda Gold Mining, 2001). The Defence Logistics Agency's policy is now to reduce the strategic national stockpile, which it does under an annual material disposal plan. Producers, processors and manufacturers also carry inventories in all forms of tantalum intended to balance fluctuations in supply-demand. Current inventories are estimated to total over 3,000 tonnes Ta₂O₅ (Roskill, 2002).

Figure 1. Sources of tantalum, 2002



The key tantalum producing countries (Roskill, 2003; Roskill, 2002; U.S.Geological Survey, 2000) are:

Australia: the Australian firm, Sons of Gwalia (SOG) is the world's largest producer of tantalum, accounting for at least 50% of global primary supply (or 30% of total global supply) from its Greenbushes and Wodgina mines in Western Australia. Significant expansion is under way. There are several other important producers in Australia, such as Tantalum Australia.

Brazil: Brazil is the world's second largest producer of tantalum after Australia with a large proportion of its production generated by *garimpeiros*, small-scale

individual miners. Paranapanema's Pitinga mine is the largest tin producer in the world with significant associated tantalite extraction.

Burundi: the tantalite deposits in Burundi are directly related to the resources in eastern DRC and artisanal mining has occurred since the 1930s. Small-scale miners are now employed by COMEBU, a joint venture between local and Belgian organizations. It is hoped to attract investment in order to expand production.

Canada: Tantalum Mining Corp. (Tanco), wholly owned by US firm Cabot Corp., produces the majority of Canadian tantalum at its Bernic Lake underground mine in Manitoba. All of Tanco's production is shipped to Cabot Corp. for processing. There are also several other large producers and numerous exploration projects but, in general, Canada's global market share of tantalum production is falling.

China: in 2001, China produced 6% of the world's tantalum. Only a quarter is exported, however, and this is likely to decrease as China's electronics industries grow and the country becomes a net importer. It is estimated that China accounts for around 12% of the total world reserves.

The Democratic Republic of Congo: tantalite bearing ores occur in many areas of eastern DRC. Much of the country's production is by artisanal miners under conditions described in this report. It is estimated that the DRC may contain significant reserves, but current political instability and the difficulty of access have suspended most commercial activity.

Ethiopia: the Ethiopian government both produces and processes tantalite concentrates at a plant in Kenticha. Investment is being sought to expand operations.

Malaysia: production of tantalum in Malaysia is primarily related to tin mining and slag generated by tin smelters, which are reducing in importance.

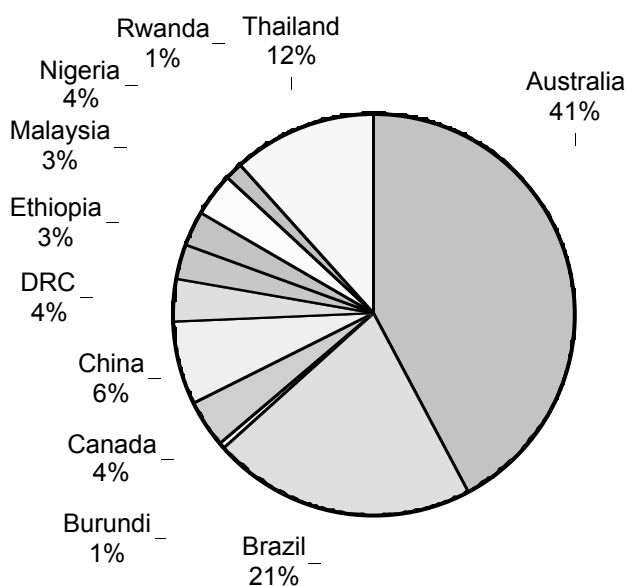
Nigeria: there is considerable disparity between reports of Nigerian tantalite production from several companies operating in the country. The government is seeking to control illegal production and attract investment to increase production.

Russia: the former Soviet Union possessed some of the largest tantalum reserves in the world with 98% of these in Russia. Over half these reserves are not exploited as the industry lacks infrastructure and development.

Rwanda: Rwanda's national boundaries encompass some of the tantalite deposits that also occur in the DRC and Burundi. Most production is carried out by artisanal miners for the government-owned REDEMI.

Thailand: columbite and tantalite are mined with cassiterite ores along the west coast. Coupled with recovery from tin slag, this makes Thailand an important producer, although its global share, like that of Malaysia, is falling. The main companies involved are HC Starck (Thailand) and Thaisarco.

Figure 2.
Tantalum production by country, 2001



Other countries that either have tantalum-bearing deposits or produce tantalite are: Angola, Armenia, Argentina, Bolivia, Chad, Congo Brazzaville, Egypt, Equatorial Guinea, Estonia, Finland, France, French Guiana, Ghana, Greenland, Guyana, India, Ireland, Ivory Coast, Kazakhstan, Mongolia, Mozambique, Namibia, Norway, Portugal, Saudi Arabia, Sierra Leone, South Africa, Spain, Uganda, Ukraine, USA, Venezuela and Zimbabwe (Roskill, 2002). Of these countries, the main developments have been in:

Mozambique: the Marropino tantalum project is in the final stages of commissioning, and could produce upwards of 100,000 lb per year of metal contained in tantalite. This could become the third largest tantalite mine in the world.

Namibia: Camec has started mining, and has a contract to supply agents in Hong Kong.

Saudi Arabia: Tertiary has enormous resources and is forecast to produce 600,000 lb per year (Roskill, 2003)

Table 1. Producers of raw materials

Company Name	Location
Angus & Ross plc <i>(20% owned by Cabot who have rights to buy 50% of its production)</i>	UK
BEH Minerals Sdn Bhd Malaysia Cambior Inc	Canada
CBMM Brazil	Brazil
Commerce Resources Corp	Canada
Ethiopian Mineral Development Enterprise	Ethiopia
Haddington International Resources Ltd	Australia
Leo Shield Exploration Ghana Ltd	Australia
Malaysia Smelting Corp	Malaysia
Mamore Mineracao e Metalurgica Ltda	Brazil
Metallurg International Resources	USA
Mineracao Catalao de Goias Ltda	Brazil
New Millennium Resources	Australia
Nigerian Mining Corp	Nigeria
SA Minerals Ltd Partnership	Thailand
Sons of Gwalia	Australia
Tanco (Tantalum Mining Corp of Canada)	Canada
Tantalum Australia Operations Pty Ltd	Australia
Tertiary Minerals plc	UK
Thailand Smelting & Refining (Thaisarco)	Thailand

(Commerce Resources, 2003; TIC, 2002; TIC, 2003)

2.4. Supply chain: traders

Traders operate between producers and processors as well as between processors and manufacturers. It has proved difficult to estimate the scale of this aspect of the industry and therefore the best source of information is the Tantalum–Niobium International (TIC) Study Center’s membership list. It is reasonable to assume, however, that large numbers of traders are not members.

Table 2. Tantalite traders – TIC members

Company Name	Location
A&M Minerals & Metals Ltd	UK
Chori Co Ltd	Japan
Di Assets	UK
Euromet	UK
Metherma GmbH	Germany
MIC Japan	Japan
Osaka Trading Co Ltd	Japan
Pacific Ores Metals & Chemicals Ltd	China
Plazaminerals	Switzerland
Sogem	Belgium
Speciality Metals Company SA	Belgium
Standard Resources Corp	USA
Trademet	Belgium

(TIC, 2003)

2.5. Supply chain: tantalum processors

The extraction and refinement of tantalum from ore produces the metal as a powder, which is then processed into wire or strip (Michaluk et al, 2000).

The primary companies involved in refining ore into metal are American firm Cabot Corporation, German firm H.C.Starck (a subsidiary of Bayer) and Chinese government-owned firms (Michaluk et al, 2000). Again, reference to the TIC membership, with some additions from Commerce Resources, helps to build a clearer picture of the number of companies involved (2003).

Table 3. Processors of tantalum

Company Name	Location
AS Silmet	Estonia
Cabot Supermetals	USA
Cabot Supermetals KK	Japan
Conghua Tantalum & Niobium	China
Duoluoshan Sapphire Rare Metal Co	China
Exotech	USA
F&X Electro-Materials Ltd	China
HC Starck – V Tech Ltd	Japan
HC Starck (Thailand) Co Ltd	Thailand
HC Starck GmbH & Co KG	Germany
HC Starck Inc	USA
Juijiang Tanbre Smelter	China
King Metallurgical Industry Co Ltd	China
Metallurg International Resources	USA
Mitsui Mining & Smelting Co Ltd	Japan
NAC Kazatomprom (Ulba Metallurgical)	Kazakhstan
Ningxia Non-ferrous Metals Smelter	China
Niotan Inc	USA
NW Inst. Non-Ferrous Metals Research	China
Reading Alloys	USA
Reference Metals Company Inc	USA
Solikamsk Magnesium Works	Russia
Treibacher Industrie AG	Austria
Wah Chang USA WC Heraeus GmbH	Germany
ZhuZhou Cemented Carbide Works	China

(TIC, 2003)

2.6. Supply chain: end users

The electronics industry is by far the largest consumer of tantalum (up to 60%), using powder, wire and foil in the production of electrolytic capacitors (Roskill, 1999; Roskill, 2002; TIC, 1998). Applications are widely varied and include medical appliances such as hearing aids and pacemakers as well as laptop computers, mobile phones, play-stations and digital cameras (TIC, 2003).

Tantalum capacitors are manufactured by a range of different processes and have differing applications:

Dry electrolyte capacitors, both solid tantalum and tantalum chip: the cheapest, most widely used type, which permit a high degree of miniaturization and are found in automobile engine management systems, computers, cameras, VCRs and phones

Wet electrolyte capacitors: smaller volume applications, used in aerospace and weapons management systems and the offshore oil industry, becoming rare

Foil capacitors: the least common type, used in high voltage applications

Increased demand for capacitors has not had an equivalent impact on general tantalum consumption as processors have been increasing the capacitance of tantalum powder leading to smaller units using less metal per unit. There is some indication, however, that this has levelled off at present (Roskill, 2002).

World production of tantalum capacitors was estimated at a peak of 24,000 m units in 2000. In line with the market trend, capacitor production fell in 2001, rallied in 2002 and is expected to average 9-10% growth per year until 2005 (Roskill, 2002).

Table 4.
Major tantalum capacitor manufacturers

Company Name	Location	Manufactured in
AVX Ltd AVX Corp	UK USA	Distributor for Kyocera; Japan manufactures at 27 facilities worldwide
Bourns Inc	USA	Manufactures in Taiwan
Elna	Japan	JV with Lelon Electronics of Taiwan; manufactures in Japan & China
Epcos AG	Germany & Japan	JV between Siemens & Matsushita; manufactures in Germany, Portugal, Czech Rep & China
Fujitsu Media Devices Ltd	Japan	Also has US subsidiary; manufactures in Japan

Company Name	Location	Manufactured in
Hitachi AIC	Japan	Manufactures in Japan
Kemet Electronics Corp	USA	World's largest producer of solid tantalum capacitors; manufactures in USA & Mexico
Matsushita Electronic Corp	Japan	Manufactures in Japan
NEC Tokin	Japan	Manufactures in Japan & Thailand
Nichicon Corp	Japan	Also has US subsidiary; manufactures in Japan & USA
Ningxia	China	Manufactures in China
Nippon Chemi-Con	Japan	Manufactures in Japan
North American Capacitor Co	USA	Manufactures in USA
Panasonic Industrial	Japan	Various
Partsnic Ltd	UK	Manufactures in Korea & Vietnam
Sanyo Electronic Components	Japan	Manufactures in Japan
Shenzen Capacitors Industrial Ltd	China	Manufactures in China
Vishay Inter-technology Inc	USA	Co-operative agreement with China Non-Ferrous Metals Industry Corp; manufactures in USA, Czech Rep, France, Germany, Israel, Mexico, Taiwan, Japan & Portugal

(Roskill, 2002; TIC, 2003)

The telecommunications industry is an important consumer of tantalum capacitors, accounting for approximately 18% of demand units, but it has not been possible to determine how this share compares with other tantalum capacitor consumers (Global Sources, 2001). Tantalum capacitors support handset miniaturization and long battery life. Ericsson

pioneered handsets that do not use any tantalum and the actual number of capacitors used per handset by other manufacturers, including Motorola and Nokia, is decreasing, though this is offset by the increase in the global volume of handset production. Also Global System for Mobile communications (GSM) phones that use multi-slot transmission and third generation (3G), which require the high capacitance conferred by tantalum, have triggered a resurgence in demand (Roskill, 2002).

Drivers of growth in capacitor demand in the personal computing market include the replacement of traditional monitors with LCD flat screens as well as demand for Personal Digital Assistants (PDAs) with voice recognition and improved displays (Roskill, 2002). Mass storage units are a growth area, as are digital cameras and video recorders.

Automotive electronic features including engine management systems, driver monitoring devices, Global Positioning System (GPS) navigation systems, collision avoidance systems as well as traffic control road-side devices will all increase demand for tantalum capacitors (Roskill, 2002).

Other electronic applications include surface acoustic wave (SAW) filters, dynamic random access memory chips, ferro-electric memory chips, semi-conductor chips and liquid crystal displays. Key corporations in these fields include Mitsubishi Materials, Fujitsu Media devices, Epcos, Texas Instruments, Applied Materials Inc., Samsung, NEC, Hitachi, Toshiba, Matsushita, and Advanced Micro Devices (Roskill, 2002).

Tantalum is increasingly used as an additive in a variety of alloys where its properties of heat and corrosion resistance are of particular value. Superalloys are designed for use at temperatures >800°C where tensile, thermal shock and vibratory resistance are encountered.

Key applications for tantalum superalloys are land-based turbines for electricity generation and turbine blades for aircraft engines – the latter account for 75% of global demand for superalloys, with civilian applications outstripping the military sector. Growth in demand for superalloys is predicted to increase at 3% pa until 2009 (Roskill, 2002).

Table 5. Major superalloy manufacturers and their product brand names

Company Name	Location	Product Names
Allegheny Teledyne Inc	USA	-
Aubert et Duval	France	-
Cannon-Muskegon Corp	USA	CM
Carpenter Technology Corp	USA	Pyromet
Changcheng Special Steel Works	China	-
Daido Steel	Japan	-
Electrometal	Brazil	-
Electrostal	CIS	-
Firth Rixon Glossop	UK	-
Feroni	Italy	-
General Electric	USA	-
Rene Haynes International	USA	Hasteloy, HM
Howmet Exeter Alloys	UK	-
Krupp/VDM	Germany	Nimofer, Nicrofer
Metal Imphy	France	-
Midhani	India	-
Pratt & Whitney Aircraft	USA	Waspaloy
PRP/VDM	USA	-
Rolled Alloys Inc	USA	RA
Ross & Catherall Ltd	UK	-
Shanghai #5 Steelworks	China	-
Special Melted Products	UK	-
Special Metals	USA	Udimet, Inco, Incoloy, Monel, Nimonic
Sumitomo Metal Industries	Japan	-
Western Australia Speciality Alloys	Australia	-

(Roskill, 2002)

Table 6. Leading aircraft engine manufacturers

Company Name	Location
Allied Signal	USA
General Electric	USA
Honeywell	USA
Ishikawazima-Harima Heavy Industries	Japan
Kawasaki Heavy Industries	Japan
Mitsubishi Heavy Industries	Japan
Motoren & Turbinen Union	Germany
Pratt & Whitney	USA
Rolls Royce / Allison	UK / USA
Snecma	France
Teledyne Continental Motors	USA
Turbomeca	France
Volvo Aero	Sweden

(TIC, 2003)

The chemical industry employs tantalum due to its property of corrosion resistance. Heat exchangers, reactor lining, and piping all use tantalum.

This property also has relevance to medical applications where surgical clips, screws, implants and instruments incorporate tantalum in their manufacture. Key companies include Plansee GmbH of Austria and Ultramet of California. Specific applications include (Roskill, 2002):

- tantalum mesh for corrective surgery of hernias
- tantalum plates to occlude holes in the skull
- perforated strips and screws to hold broken bones together
- V-clips and surgical staples to close blood vessels
- surgical and dental instruments
- dental implants
- tantalum-coated carbon foam to replace vertebral discs in the spinal column
- joint replacement components
- bone scaffold void filling

Tantalum oxide's high index of refraction coupled with its ability to reduce x-ray exposure and enhance image quality means it is used in camera lenses, x-ray film and ink jet printers (TIC, 2003).

2.7. Price

A tantalum-bearing concentrate may contain 10–40% Ta₂O₅. Its commercial value is calculated on the tantalum oxide content (which could be as little as one tenth of the total weight of the material) (TIC, 2003).

There is no central market for tantalum, so dealers set prices on an individual transaction basis. The US government stockpile sale price is published, which acts as one indicator, and prices are also available on various industry websites. The Tantalum-Niobium International Study Center is prevented from discussing prices by its Charter, EU competition law and US antitrust legislation (TIC, 2002). Calculations of price by researchers are complicated by failure to specify whether the quote is per pound of Ta₂O₅ or per pound of raw ore.

During the 1970's, increasing demand coupled with ore shortages led to a spate of panic buying and stockpiling, which drove prices tenfold above normal by 1979/80, peaking at USD118 per pound. Processors passed on these escalated prices to their customers, resulting in decreased demand and a search for cheaper alternatives. Reduction of the accumulated inventories contributed to a temporary price reduction, in turn contributing to another shortage and price peak in 1988, albeit significantly smaller than before (Cunningham, 1998).

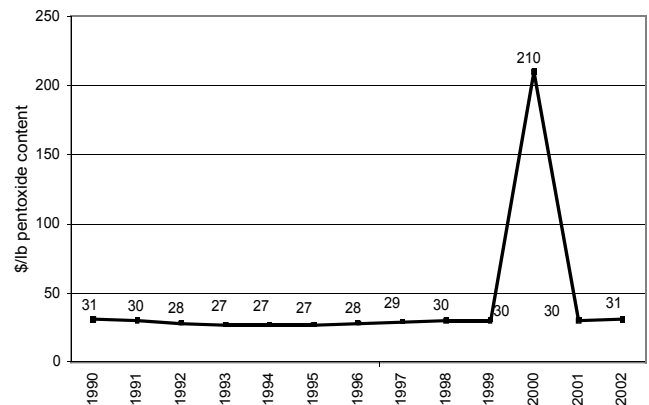
In 1991, Sons of Gwalia (Australia) entered into long-term, fixed-price contracts with Cabot Corp. and H.C.Starck. These contracts were intended to secure supply for Cabot and Starck and stabilize the price of tantalum (Lalor, 2001). Publications by a range of sources including Roskill Information Services and the U.S.Geological Survey indicated industry confidence that this would be achieved, but the 2000/ 2001 peak shattered all previous booms.

In 2000, industry saw an unprecedented demand for tantalum, exacerbated by overzealous forecasts and ordering, and speculation (TIC, 2002). Sons of

Gwalia effectively reached its ore capacity (Zogbi, 2001). What started as a "modest spike" (Terrell, 2000) grew dramatically until December when U.S. Defence Logistics Agency tantalum ore released from the national stockpile reached USD500 per pound (year average was USD219 per pound) (USGS, 2001).

Cabot and Starck's fixed price, USD40 per pound (Roskill, 2002), contracts with Sons of Gwalia were insufficient to meet demand and so these companies had to pay spot market prices to meet their excess requirements. This increase was, of course, passed on to customers.

Figure 3. Average year-end prices for tantalite, 1990 to 2002 (based on USD/lb Ta₂O₅ content)



(Roskill, 2002)

Capacitor manufacturers (such as Kemet, which had just added 85,000 square feet of manufacturing space for the production of tantalum capacitors) struggled to maintain their profit margin in the face of escalating materials prices and disgruntled customers within the general climate of economic and industry slowdown (Demers, 2000). Quoted lead times for delivery of tantalum capacitors rose to six months, in some cases even a year (Ohr, 2000). This inevitably led to 'design outs' as cheaper alternatives were sought.

As quickly as it had risen, the price of tantalite started to fall and the bottom dropped out of the market due to a combination of electronic goods sales failure to meet predictions, general economic slow-down and the need to work off inventories and use late-delivered supplies.

Kemet's struggle culminated in the reduction of 14% of its workforce in July 2001 as the severity of the market correction took its toll (Metal Pages, 2001.b). This impact was not limited to Kemet as cuts in workforce and production were manifest throughout the supply chain.

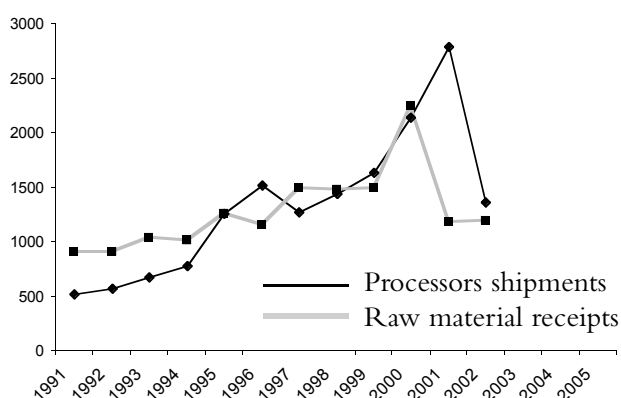
Whilst the market has re-stabilized, the repercussions of the 'boom and bust' continue to be felt. Legal disputes arose between Cabot Corp and Kemet revolving around failure to honour purchase agreements made in 2000 to purchase material in subsequent years. Cabot Corp was suing the company on procurement obligations (Levine, 2003a, b).

The US Geological Survey reports prices from three sources in October 2002 as USD20-25, USD20-30, USD40-50 per pound of Ta₂O₅ contained (2003).

2.8. Expected growth in tantalum demand/supply

There has been an average yearly growth of 8-12% in tantalum demand since about 1995 (TIC, 2003). Industry analysts, Roskill, in their 2002 report *'The Economics of Tantalum'*, state that the growth in global tantalum demand in recent years has been driven specifically by the use of tantalum capacitors in portable electronic devices including mobile phones and this demand, expected to increase at 9-10% p.a., will continue to set the pace. Roskill believes, however, that the recent reports indicating increased demand are possibly exaggerated, and that overstocking of tantalum took place at all levels of the supply chain. Trends are shown below (Roskill, 2003).

Figure 4. Trends in raw materials shipments and processors shipments



Sons of Gwalia's (SOG) contracts with Cabot and Starck were renegotiated in June 2000, with terms to 2005, and these effectively underwrite SOG's planned expansions, estimated to cost USUSD70m (SOG, 2001.a; Zogbi, 2001). The first stage of the expansion was opened in March 2003.

In December 2002, SOG announced that it would be decreasing its production. It had built up inventories that it considers sufficient to buffer market fluctuations.

Investors are not convinced that increased Australian productivity alone will rectify the situation. Resource Opportunities state that SOG's expansion "will not come close to meeting the rapidly escalating demand" (Roulston, 2001). Even SOG acknowledges the potential for another supply crisis. At 10% growth, current supplies can meet demand up to 2003. However, at 20% growth, demand will outstrip supply in 2003 by 861 tons necessitating not only expansion of existing mines but also development of new ones (Metal Pages, 2001.c). Investment decisions, however, may depend on confirmation of growth rates in tantalum-consuming industries and thus may be made too late to ensure a well-matched timeframe of capacity and demand.

Roskill considers that SOG's steps should be adequate to meet demand up to 2005. Thereafter, however, additional sources will be needed. Mine production accounts for a little over half of total tantalum supply and the industry is heavily dependent on secondary materials and inventories to fill the gap (Roskill, 2002).

Uganda Gold Mines Ltd., foresees future supplies as highly dependent on availability of ores from Africa and Russia. Uganda Gold Mines acquired three prospecting licences in May 2001 to expand its operations (Metal Pages, 2001.d; Uganda Gold Mines Ltd, 2001). Expansion and prospecting are also being undertaken in many other countries that have not previously been main producers.

Expected growth rates up to 2010 for tantalum consuming sectors other than electronics are estimated at: aerospace superalloys 1.3% pa, non-aerospace superalloys 6%, corrosion-resistant goods in the chemical-medical industries 2%, and cemented carbides 2-3% (Roskill, 2002; TIC, 1998).

2.9. Alternatives to tantalum capacitors

There are four types of capacitors: ceramic (70%), aluminium (20%), tantalum (4%) and film (6%) (TIC, 1998). Tantalum is the most expensive option (up to four times the price of ceramic) but has the highest capacitance, has greatest stability, can be used to make significantly smaller units and is the most reliable in a broad range of temperatures. Despite these characteristics, tantalum faces significant competition in the capacitor market (Roskill, 2002).

Whilst ceramic capacitors cannot be used for high capacitance applications, multilayer (or monolithic) ceramic capacitors are replacing old ceramic capacitors for lower capacitance needs and are experiencing the strongest growth in the industry. Electrolytic aluminium capacitors dominate the market for large capacitors, although tantalum can withstand heat more effectively than aluminium (Roskill, 2002).

The Democratic Republic of Congo (DRC) is the third largest country in Africa, situated on the Equator and bordering nine other countries. It has 37 km of Atlantic coast at the mouth of the Congo River. The DRC has massive mineral and natural resource wealth with the Congo Basin supporting the richest species diversity in tropical Africa. The population is between 49 and 59 million, divided into over 100 different ethnic groups. The DRC is currently ranked 152nd on the United Nations Development Programme (UNDP) Human Development index, and is sinking lower every year. Annual average income is USD110, with the majority earning less than USD1 per day (Oxfam et al., 2001).

3.1. Historical perspective

The DRC emerged as a country during the Belgian colonial period dating from the late 19th century. Under King Leopold II, a Congo Free State was set up, largely to facilitate the exploitation of the country's natural resources and the local population. In just under twenty years, it is claimed that some 10 million people (perhaps half of the population) died as a result of killing, abuse, neglect, malnutrition or disease (Hothschild, 1998). In 1908, the Belgian government took over the colony and curtailed some of the worst human rights abuses, although it continued to exploit the country's resources. There was little benefit to the largely rural population, who continued to rely mainly on subsistence agriculture, fishing and small-scale trading.

With independence in 1960, the hopes of economic development, and a more equitable and democratic political system, were dashed when the head of the military – Mobutu Sese Seko – took power in a coup. During his three decades in power, the country, which was renamed Zaire, suffered from serious misrule and corruption, with its resources exploited by national elites and foreign interests. During the course of the 1990s, the country became more politically unstable, partly due to the arrival of hundreds of thousands of refugees in eastern DRC, fleeing from (or being involved in) the war and the genocide in Rwanda in 1994. Rwandan Hutu militias, or Interahamwe², re-established themselves on Congolese soil. Burundian and Ugandan rebels did the same.

In 1997, Mobutu was eventually overthrown by a rebel movement emerging from the eastern part of the country, which was heavily supported by Rwandan and Ugandan armies. The rebels, led by Laurent Desire Kabila, faced little resistance, and even popular support, as they moved across the country, taking the capital in May 1997. The country was renamed the Democratic Republic of Congo. However, just over a year later, a new conflict broke out, again in the east, which has led to a humanitarian and environmental disaster for large parts of the country.

²*Interahamwe*, form the basis of the *Army for the Liberation of Rwanda (ALIR)* and *Former Armed Forces (ex-FAR)*: The FAR was the army of the Rwandan Hutu regime that carried out the genocide of Tutsis in 1994, with much of the killing being carried out by the civilian militia force, the Interahamwe. The groups merged after they were forced from Rwanda into the DRC and are now known as the Army for the Liberation of Rwanda (ALIR), which is the armed branch of the PALIR or Party for the Liberation of Rwanda. The group seeks to overthrow Rwanda's Tutsidominated government, reinstate Hutu control, and, possibly, complete the genocide. (U.S.Dept.of State, 2001).

3.2. The conflict

The 'second war' in the DRC started in August 1998 as relations between the new regime in Kinshasa and its former allies, Rwanda and Uganda, deteriorated. These countries made claims that the new Congolese government was failing to prevent, or possibly was supporting, incursions by rebels into their countries from Congolese soil. As a result, Rwanda and Uganda supported the emergence of a new rebel movement called the *Rassemblement Congolais pour la Democratie* – or the Rally for Congolese Democracy (RCD), which tried unsuccessfully to overthrow the government in Kinshasa. The Burundian army also entered the country, on similar pretexts to Rwanda and Uganda.

In the meantime, the DRC government called on the support of some of its other neighbours, namely Zimbabwe, Angola, Namibia and Chad. The governments of these countries sent armies into the country, ostensibly to protect the sovereignty of an African state whose borders had been violated. To complicate matters further, an indigenous rebel movement, led by Jean Pierre Bemba, came into being in the northern province of Equateur, eventually forging links with the Ugandan-backed faction of the RCD.

During the course of the conflict, the RCD divided itself into Rwandan-backed and Ugandan-backed factions, which led to further shifting of allegiances and outbreaks of two conflicts between the Rwandan and Ugandan armies in Kisangani in 2000 and 2002. It is no coincidence that Kisangani is one of the main diamond trading centres in the DRC. In the first 'battle' between the two armies, over five hundred Congolese civilians were killed, and infrastructure and the environment were destroyed – a pattern that has been typical of the conflict.

The Kivu region (including a newly named province in the north-east, called Ituri) is at the crux of the conflict in the wider Great Lakes region of Central Africa, where myriad inter-connected conflicts are being played out:

- 'Foreign wars' – the Rwandan army against Rwandan rebels called the Interahamwe, and

the Burundian army against Burundian rebels, the FDD.

- 'Civil wars' – including conflict between the RCD and the Mai Mai rebels; conflict between the RCD and the Banyamulenge militias; inter-faction fighting within RCD's own ranks; and most recently an intense inter-ethnic conflict between the Hema and the Lendu in the north-east of the Kivus (Ituri).
- Smaller-scale inter-ethnic and even inter-clan conflicts, which arise periodically and can have an impact at the national level.

Some of these conflicts are decades old.

KEY REPORT

International Crisis Group, 2003

The Kivus: the Forgotten Crucible of the Congo Conflict

In January 2001, the assassination of Laurent Kabila in Kinshasa created opportunities for peace in the country when his son, Joseph Kabila, took power. Although the conflict continued, most of those parties engaged in the fighting came back to the negotiating table.

3.3. Political developments – the peace process

Just under a year after the outbreak of the second war, in July 1999, most of the armies involved signed the Lusaka Accords in Zambia. These Accords pledged parties to call an immediate ceasefire, accept a UN monitoring force called MONUC, commit participants to demobilize and disarm all armed groups, initiate an Inter-Congolese Dialogue, and set up a transitional government. While progress has been made on most of these elements, albeit very slowly over the course of four years, the Accords have been complemented by bilateral agreements between Uganda and the DRC (in Sun City in April 2002) and between Rwanda and the DRC (in Pretoria in July 2002). Ceasefires have been agreed, accompanied by the withdrawal of most of the foreign armies. The

armies of Chad, Namibia and Angola have departed, although the Zimbabwean army has yet to complete its full withdrawal from areas around the mineral and timber-rich Mbuji Mayi and Lubumbashi.

KEY REPORT

Global Witness, 2002

Branching out: Zimbabwe's resource colonialism in Democratic Republic of Congo

The UN has endeavoured to monitor and encourage troop withdrawal and demobilization of armed militias. The force has been too small, however, to have had any serious impact on the situation, let alone safeguard the civilian population. In December 2002, the UN Security Council passed Resolution 1445, which increased the military personnel of MONUC from 5,537 to 8,700 in order for it to carry out a more effective monitoring role. It is also mandated to carry out a programme of Disarmament, Demobilization, Repatriation, Reintegration and Rehabilitation – rather more manageably referred to as DDRRR. This programme must succeed if there is to be a lasting peace in the country. The programme identifies and removes ‘negative forces’ (such as the Interahamwe and the Forces pour la Défense de la Démocratie (FDD)) but it has had very limited success to date other than securing small groups of tens of rebels handing in their arms and agreeing to ‘return home’.

In the political process, the Inter-Congolese Dialogue has led to the establishment of a Government of National Unity, which is based in Kinshasa. At Sun City, in April 2003, the different Congolese factions finally agreed to a power-sharing arrangement. Joseph Kabila retains his position as Head of State, and each of the main factions is represented by a Vice-President (there will be four in total). This transitional unity government has a mandate of two years in which to establish democratic institutions and a common army, and to prepare for national elections.

3.4. Exploitation of resources

While the different foreign armies claimed that security was the main justification for their presence, all have been accused of the illegal exploitation of the natural resources of the DRC. Since 2000, a Panel of Experts has been commissioned by the UN Security Council to investigate these claims.

In April 2001, the Panel reported widespread exploitation of natural resources by foreign troops. The report was considered unbalanced by some observers as it focused largely on ‘illegal’ exploitation in the eastern provinces and recommended sanctions against Rwanda, Burundi and Uganda, but neglected to document fully the situation in the government-held territories. A further report was published in November 2001, which, while more balanced, reached the same conclusion that there was a direct link between the conflict, the humanitarian crisis, and natural resource exploitation.

The Panel of Experts was reconstituted and issued a more comprehensive report in October 2002, reasserting that there was widespread exploitation and looting by all parties involved in the conflict. It also named individuals and companies, which required further investigation.

KEY REPORT

United Nations, 2002

Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth in the Democratic Republic of Congo (S/2002/1146)

As a result of the October 2002 report, the mandate of the Panel has been extended again, with governments, individuals and companies being given an opportunity to respond to the allegations in the report. A number of other reports on illegal exploitation have also been produced, which are mainly in accordance with the findings of the UN Panel.

KEY REPORT

Amnesty International, 2003

**The Democratic Republic of the Congo:
Our brothers who help kill us –
exploitation and human rights abuses in
the east**

KEY REPORT

*All Party Parliamentary Group on the Great
Lakes Region and Genocide Prevention, 2002*

**Cursed by Riches: who benefits from
resource exploitation in the Democratic
Republic of the Congo?**

3.5. Ongoing conflict in the east

Despite the encouraging signs of progress on the political front, the situation in eastern DRC remains bleak. Ongoing local and regional conflicts continue to destabilize national efforts to attain peace. The war has been based on ‘predator economics’ – conflict and resource control have been inextricably linked – and long-term resolution therefore requires that such issues are acknowledged and addressed in peace negotiations.

The withdrawal of the Rwandan and Ugandan armies left a political vacuum in eastern DRC. The rebel authorities are holding onto power, mainly in towns, airstrips and mining areas, resulting in even further social and political fragmentation. New rebel movements have emerged, sometimes in order to reap the benefits of the natural resources, all of which adds to an already complicated picture. Recently, there has been an escalation in fighting in South Kivu, especially around the towns of Uvira and Walungu. It is also alleged that the Rwandan and Ugandan armies have not fully withdrawn from the east.

The worst of the conflict since the signing of the 2002 bilateral agreements and the subsequent withdrawal of foreign troops has been in the northern part of North Kivu, in a newly declared province called Ituri (where there are said to be deposits of coltan and other minerals). Fighting

between the Hema and Lendu ethnic groups has led to the deaths of over 55,000 people and the displacement of over 500,000 people (APPG, 2003). MONUC, the UN force, has largely been powerless to prevent the conflict. All sides, both national and international, have been variously accused of supporting, and even arming, different factions. The recent intervention of a multinational force in June 2003, comprising French and British troops, was therefore essential.

3.6. The humanitarian crisis

It is estimated that over three million people have died as a direct or indirect result of the war in the Congo since 1998 (IRC, 2003). The vast majority of these deaths, 90%, have occurred in the eastern part of the country, and are attributed to malnutrition or disease due to the displacement of people fleeing violence. Over 200,000 people have died at the hands of soldiers from all factions involved in the conflict (World Bank, 2002). An estimated 2.7 million people, up to 5% of the total population, have been displaced as a result of fighting; most are located in the east of the country (OCHA, 2003). An estimated 18 million have no access to services of any kind, with about 20 million regarded as vulnerable populations (APPG, 2002).

KEY REPORT

*Oxfam International, Save the Children,
Christian Aid, 2001*

**No end in sight: the human tragedy of the
conflict in the Democratic Republic of Congo**

3.7. The economy

Historically, mining of copper, cobalt, diamonds, gold, zinc and petroleum accounted for about 75% of total export revenues and about 25% of the country’s GDP (World Bank, 2002). However, the economy has been in decline since the 1970s, exacerbated by the conflict in the 1990s and into this century, culminating in the virtual collapse of the formal economy.

The stabilization measures launched by the government in May 2001 have been successful in breaking the spiral of hyperinflation from 630% in the second half of 2000 to 8.8% one year later. Currency depreciation has also been addressed and the exchange rate stabilized. It is hoped that the downward trajectory of the Congolese economy will make a credible and sustainable upward turn in 2003.

The significant progress achieved by the government has prompted important financial commitments by the World Bank and the International Monetary Fund (IMF). A USD450m Economic Recovery Credit was approved in mid 2002 to support economic reforms, with a further USD454m Emergency Multi-Sector Rehabilitation and Reconstruction Project (EMRRP) also approved. The EMRRP is part of a broader USD1.74bn priority programme supported by a wide range of donors to develop transportation, energy, water, agriculture, health, education and social services (World Bank, 2002). Loans, however valuable, add to the country's massive debt burden, so debt relief will be a key component of economic recovery. The International Development Association (IDA) has released a USD44m grant (Ford, 2002).

The *de facto* partitioning of the country and the impact of open warfare effectively halted domestic trade between provinces. The Congo River will play a critical role in its revival, in terms of trading routes, water supplies and hydroelectric power generation. The importance of good environmental management of the river system cannot be overstated.

Oil extraction is now in the hands of independent oil firm, Perenco, and exploration licences have been granted to other companies, including Heritage Oil, to prospect for resources in north-eastern DRC, in the Ituri region. Although there have been no major oil finds as yet, there are concerns about exploration occurring in important protected areas as well as the role played by different armed factions in the region, resulting in further killings and population displacements.

KEY REPORT

Pole Institute, 2003

Shifting Sands: Oil Exploration in the Rift Valley and the Congo Conflict

The importance of breaking the cycle of poverty and conflict is recognized by the World Bank and encapsulated by the Bank's DRC Country Director, Emmanuel Mbi: "*The early provision of peace dividends, in the form of concrete actions that reach the population, is critical to sustain the momentum for peace*" (Ford, 2002).

From the start of the current war, foreign businesses reduced their operations or pulled out entirely due to instability, government harassment and restrictions. Poor infrastructure (of 145,000 km of roads, only 2,500 km are asphalt), an uncertain legal framework, corruption, and a complete lack of transparency in government policy and operations made investment and growth impossible.

Attracting responsible investment to the country constitutes a considerable challenge and is most likely to focus on the three sectors in which the DRC has, or could have, important comparative advantages: mining, export agriculture and forestry. The new World Bank Codes for mining, forestry and investment are of fundamental importance to this process.

The scale of the economic crisis is hard to comprehend. In much of the country, especially in the east, the conflict has led to the destruction or plundering of small businesses, farms, crops and livestock. People have resorted to their last asset – labour. Many men and women work in transient mineral mines, often as forced labour in extremely hazardous conditions, or work as porters for soldiers, or enter into prostitution.

Agricultural development has received little government attention and even less investment even though it is the main economic activity for the majority of the population. Any projects that have been undertaken have been with the financial assistance of international organizations and NGOs but their success has been severely constrained by socio-political circumstances. Displacements have resulted in abandoned farms, overcrowding on marginal land and the reversion of productive land to bush (FAO/GIEWS, 2001). Large areas that used to grow food crops, such as Ituri and the Kivus, are now uncultivated.

The United Nations Food and Agriculture Organisation (UN FAO) reports that food supply to the population has collapsed (2001). Oxfam estimates

that more than 16m people have critical food needs. In Kinshasa, an increasing proportion of the population eat only once every two or three days. In the eastern rebel-held areas and refugee camps, the situation is even worse, with the severe malnutrition rate among children under five reaching 30% (2001).

3.8. Humanitarian concerns and human rights

As people's livelihoods have changed, and become more restricted, the social structure of communities has changed. In the east especially, population displacements have had seriously negative effects, with a breakdown in the extended family unit tearing at the very fabric of society.

The conflict has resulted in a decline in the health and education status of the population, with rural health services and schools being looted or abandoned. Many of these were already under-resourced through the lack of state funding, having to rely instead on churches, large companies, and non-governmental organizations. The occupying armies and rebel authorities have aggravated the situation by imposing crippling taxes with no related investment in social support or infrastructure.

There have been serious human rights violations in the country, especially in the eastern provinces. The conflict has seen the recruitment of child soldiers, by both the regular armies and the militias. It has also seen a disturbing escalation in sexual violence, with reports of rape and killing of women by all sides of the conflict in eastern DRC. Appalling cases of widespread and systematic sex slavery, gang rape, genital mutilation and murder of women and girls as young as five years old have been clearly documented.

As with other social systems, the judiciary has collapsed, with the result that such crimes, perpetrated on a daily basis, remain unpunished.

The maternal mortality rate is not only associated with lack of healthcare; statistics indicate that pregnant women are 2-3 times more likely to suffer a violent death than are other women, indicating selective killing of expectant mothers (IRC, 2001; UN IRIN, 2001.b).

Sexual violence has compounded an already growing HIV/AIDS crisis in the country. It is estimated that 10% of the population are living with HIV or AIDS, and up to one million children have been orphaned by AIDS (Oxfam et al, 2001).

The absence of routine vaccination programmes has contributed to the re-emergence of preventable diseases such as measles, whooping cough, and bubonic plague, while malaria continues to be the main killer. With access to clean drinking water limited in the best areas to half the population and, in the worst, to a tiny minority, water-related diseases such as cholera and sleeping sickness are increasing. The World Bank estimates that clean water and sanitation do not become a government priority until national per capita income exceeds USD2,000 – DRC has a long way to go (O'Neill, 1999). At least 18.5m people (over 30% of the population) cannot obtain health care as hospitals have deteriorated through lack of maintenance, medication and staff, or were destroyed in the war. There are 2,056 doctors for a population of almost 50 million; of these, 930 are in Kinshasa (Oxfam, 2001).

Beyond the immediate suffering and social disintegration, there are severe long-term implications for the DRC's future development – as bluntly stated by the IRC: '*There is a dearth of children*' as 60% die before their fifth birthday. There are many thousands of children on the streets at risk of sexual exploitation. 40% of children cannot attend school, so that even if they survive these hazards and crises, they will constitute an unskilled, illiterate workforce (IRC, 2001; Oxfam, 2001).

KEY REPORT

Human Rights Watch, 2002

The war within the war: sexual violence against women and girls in eastern Congo

3.9. Child soldiers

KEY REPORT

Human Rights Watch, 2001

Democratic Republic of the Congo Reluctant Recruits: children and adults forcibly recruited for military service in North Kivu

Child soldiers as young as eight years old were used in the 1996-97 war between Laurent Kabila's Alliance of Democratic Forces for the Liberation of Congo (AFDL) and President Mobutu. Kabila enrolled thousands of young kadogos (Swahili for "the little ones") in his armed forces where they were trained by Congolese and Rwandan army soldiers and officers (HRW, 2001.b).

After 1997, children continued to serve in the government Congolese Armed Forces (FAC), while others became street children. In March 1998, the first training centre was established to target kadogos in a new national service scheme. Some 6,000 youths were sent for military training, many of them street children, some reportedly abducted. An informal survey of troops in Kinshasa in November 1998 found that 7% of FAC soldiers were under 13 years of age. FAC continued forcibly to conscript children and into 2001 it was reported that children as young as 10 years old were still being recruited (CSUCS, 2001).

A UN report in 2000 estimated that between 15-30% of all newly recruited combatants in the DRC were children under 18 years of age, and a substantial number were under 12 years old (UN, 2000.a). The number recruited by the government and by each armed faction is unknown. In RCD-Goma's training camp at Mushaki in Masisi, the UN estimated that among over 3,000 newly recruited young soldiers, more than 60% were under the age of 18 (UN, 2001.a).

The practice extended to all parties involved in the conflict. Soldiers collected young men and children at market gatherings with the result that men no longer attend them and the markets in the interior, the local people's trading lifeline, no longer function properly. (HRW, 2001.a).

The recruits were taken to military training camps in preparation for combat against armed troops and civilian countrymen. Child soldiers often serve initially as runners, bodyguards, porters or spies and later learn to use arms and serve in combat.

"[The children] were trained on how to use arms and how to shoot, and that was the end of it. Some of the kids were even sent to battle without arms. They were sent ahead of battle-ready troops of the RCD and RPA to create a diversion. They were ordered to make a lot of noise, using sticks on tree trunks and the like. When they succeeded in diverting the attention of government troops, that is to say when they drew government fire on their unarmed elements, these units, known as the Kadogo Commando, would be literally allowed to fall like flies under government fire. The experienced troops would then attack the government troops when their attention was diverted to the Kadogo Commando."(HRW, 2001.b)

By recruiting children and training them for combat, all official parties have violated provisions of the Geneva Conventions as well as the 1999 Lusaka Accord. The United Nations has expressed grave concern over the situation and has called on all armed forces and groups immediately to cease all campaigns for the recruitment, abduction, cross-border deportation and use of children. The UN has further demanded steps for the demobilization, disarmament, return and rehabilitation of all such children with the assistance of relevant United Nations and other agencies (UN, 2000.b)

In February 2001, the European Union General Affairs Council also expressed deep concern at the continuing human rights violations in the DRC and at the recruitment and use of child soldiers in the conflict. It urged all parties to end this practice immediately and stated that the EU would consider what measures could be imposed if the parties to the conflict did not honour their commitments to international law (EU, 2001).

Under growing international pressure in early April 2001, RCD-Goma authorities undertook to cease the recruitment of child soldiers and to demobilize those already in their forces. They also undertook to work with UN and other international agencies to help return these children to their homes. The president of RCD-Goma reportedly pledged

specifically to hand over 667 children to United Nations Children's Fund (UNICEF). However, at a ceremony marking the end of a training programme at Mushaki in mid April, nearly 1,800 of the 3,000 graduates receiving uniforms and firearms were children aged 12 to 17. High-ranking RCD-Goma and Rwandan military officers attended the ceremony. Witnesses also reported the arrival in Rwanda of Congolese children for training in military camps that month (HRW, 2001.a).

In December 2001, the Government announced its intention to demobilize and socially reintegrate 2-3,000 child soldiers as a "moral duty and investment". (Agence France-Presse, 2001).

Despite efforts by the United Nations and national and international aid agencies to end the recruitment of child soldiers, the practice continues to this day. Regular and irregular armies have enrolled and armed children as young as seven or eight in their attempt to maintain or gain territory. In Bukavu, on 18th February 2003, one of the authors of the report witnessed a child soldier, aged about ten years old, standing guard for Joseph Mudumbi, the RCD-Goma Minister of Foreign Affairs and Cooperation. In the province of Ituri, there have been numerous reports in 2003 of the active recruitment of child soldiers by both sides of the ethnic conflict.

4.1. Coltan mining

‘Coltan’, a term unique to Central Africa, is an abbreviation of *columbo-tantalite*, the name given to an ore containing both niobium and tantalum. It appears that coltan is widely distributed in eastern DRC, particularly around the Kivus. It occurs in national parklands as well as in undesignated forest and on agricultural land. Congolese law states that extraction of minerals by a landowner can only be carried out under licence. Like most government regulations, however, this holds little sway under conditions of war.

Coltan in Central Africa occurs in streambeds, alluvial deposits and soft rock so is easily extracted by pick and shovel, although the hillsides are steep and fatal collapses are frequent. The *creuseurs* or *boulonneurs* (miners) dig, pan and bag the coltan.

The gravel is sieved through 5mm mesh and the resulting grit is washed in a bowl until only heavy coltan particles remain. The grit is measured in 200g (7oz) units, packaged into nylon bags made from food sacks, sewn closed and carried in a basket-rucksack made from liana vines (Redmond, 2001).

The *creuseurs* pay spoonfuls of coltan³ to the military forces that control the land and another to the *chef de colline* (literally, ‘chief of the hill’ or local authority) – by way of tax. Porters are paid in coltan to carry 20kg (44lbs) to the nearest trading centre, or *comptoir*, where the ore is tested by spectrographic analysis to determine the percentage of tantalum present. The

coltan is purchased by *negotiateurs*, or traders. In mid 2001, there were 19 *comptoirs* and *negotiateurs* in Bukavu paying USD20–75/lb for 10–20% tantalite ore. (Redmond, 2001; Zajtman, 2001). Most of these *comptoirs* are now said to have ceased functioning, and have been replaced by others (UN Panel of Experts 2002; APPG 2002).

If the *negotiateurs* obtain a licence (which can cost as much as USD40,000 per year according to one report) they are designated an official *comptoir* and they pay an export tax of USD4 per kilo (USD1.8 per lb) (Redmond, 2001). Many *negotiateurs* operate without a licence and smuggle coltan across the notoriously porous Congolese border to Kigali, Rwanda, either by road or air using Russian Antonov cargo planes (Pitman, 2000). It is alleged that much of this traffic in coltan has been sanctioned by the rebel and Rwandan authorities (UN Panel of Experts 2002, APPG 2002).

At every stage, the vendors are subject to taxes, bribes and the risk of outright confiscation or theft of their ore. Night-time raids on *creuseurs* by armed bandits often occur (Vick, 2001; UN Panel of Experts 2002; Amnesty International 2003). The mines themselves are extremely hazardous and deaths in mine collapses are regularly reported. In January 2002, at least 30 people died in a single incident. RCD-Goma suspended work but miners, desperate for work, continued to mine nearby in lethal conditions (BBC, 2002).

³Coltan is measured by the dessertspoon, 4 of which fit into a small condensed milk tin, ‘le gosse’. This term was originally the condensed milk brand name but is now used to refer to the tin itself (Redmond, 2001).

The world shortage in tantalum in 2000 had a profound effect on the DRC. Congolese gold miners switched to tantalite, farmers left their fields to mine, youths aged 12–18 were forced into labour as an ‘Army of Development’ under military supervision, Rwandan prisoners were used and a wholesale invasion to exploit the resources in the national parks commenced (APPG, 2002).

The Klondike-style rush was highly lucrative. In December 2000, in order to ‘regulate trade’ and maximize profits, RCD-Goma granted a monopoly to the Great Lakes Mining Company (SOMIGL). According to the former RCD-Goma leader, Dr Adolphe Onusumba, in 2000 his rebel government raised only USD200,000 per month from diamonds compared to USD1m from exporting 100–150 tons of coltan per month (Vick, 2001).

KEY REPORT

Pole Institute/CREDAF, 2001

The coltan phenomenon: How a rare metal has changed the life of a population of war-torn north Kivu province in the East of the Democratic Republic of Congo

The monopoly was lifted in April 2001, coinciding with the publication of a report by the Panel of Experts of the United Nations Security Council, which condemned illegal trade in the DRC. Onusumba stated that the monopoly was lifted as smuggling was on the increase (presumably to avoid accepting SOMIGL’s low prices and paying their high taxes) and this fall in income was making it hard “to realize their main objectives of saving lives, fixing hospitals and getting medicines for people in need” (Jamboweb, 2001).

Successive reports by the Panel of Experts of the UN Security Council have accused the governments of neighbouring countries, the rebel forces, and the international private sector of participating in the opportunistic and systematic looting and exploitation of natural resources in the DRC. They have stated unequivocally that the conflict in the DRC is primarily about access to, or control and trade of coltan, diamonds, copper, cobalt and gold (2001/2002).

KEY REPORT

United Nations 2001, 2002

Report of the panel of experts on the illegal exploitation of natural resources and other forms of wealth of the Democratic Republic of Congo

As the price of tantalum dropped over 2001, so did quantities being exported from the DRC. It is most likely that the reduction in the illegal trade was attributable to manufacturers working off their expensive inventories rather than to any pressure resulting from the UN report (Metal Pages, 2001.a).

The decrease in coltan prices caused a sharp reduction in revenues for the occupying forces, rebel authorities and armed militias (including the Mai Mai) who, as a result, resorted to retroactively demanding higher taxes from local businesses and have imposed much higher customs tariffs. Desperately short of funds, RCD-Goma even began imposing duties on aid materials brought in by humanitarian agencies (UN, 2001.d).

Despite the negative international publicity, cancellation of orders by companies, low market price and threats of sanctions, coltan mining continues, allegedly due to the low cost of labour for extracting the ore (UN, 2002).

Everyone, everywhere denies purchasing Congolese coltan. Someone, somewhere is.

KEY REPORT

International Peace Information Service, 2002

Supporting the War Economy in the DRC: European companies and the coltan trade

4.2. Coltan and bushmeat – a lethal combination

As the price of tantalum rose on the international market, coltan mining took priority over extraction of all other minerals in the DRC. Key supplies lay within the borders of national parks and their UNESCO World Heritage Site status was

inconsequential. In December 2000, park officials who maintained control of only 5-10% of the Kahuzi-Biega National Park (KBNP) outside Bukavu reported that 3,150 families (over 10,000 people) had moved into the park (Astill and McKie, 2001; Pattison, 2001).

The miners did not bring any livestock. Instead the camp's food needs were supported by a group of about 300 professional hunters. The park rangers report that the hunters shot wildlife, or 'bushmeat', with Kalashnikov rifles provided by the rebel armies who controlled the mines (Astill and McKie, 2001).

The wildlife toll is unknown but it is suspected that all 3,700 elephants and most of the 8,000 eastern lowland gorillas (Grauer's gorilla) in KBNP have been killed. In the highland area still patrolled by park wardens, all 350 elephants and half its 258 gorillas are gone. An indication of the status of other species was given by an undercover investigator in KBNP. He reported that the miners had been eating elephant, gorilla, chimp, buffalo and antelope for a year, but by March 2001 they were eating tortoises, birds and small animals. Previously, hunting trips had lasted a day, now they lasted a week and often did not catch anything. External trade had all but stopped as subsistence took precedence (Redmond, 2001).

KBNP was not the only park invaded. A further 3-4,000 coltan miners moved into another World Heritage Site, the Okapi Wildlife Reserve (OWR), north-east of Kisangani, where they set up huts, markets and bars. Again, hunting was wholesale and indiscriminate (Pattison, 2001). The author cannot obtain any information regarding the impact of coltan mining on bushmeat hunting outside the parks.

The worst-case scenario is that Grauer's gorilla, which occurs only in the DRC, with 86% of the population in Khauzi Biega National Park, has been reduced from 17,000 to 2-3,000 in three years, an 80-90% decline (Bailey, 2000; Redmond, 2001).

KEY REPORT

Dian Fossey Gorilla Fund Europe & Born Free Foundation, 2001

Coltan boom, gorilla bust

4.3. Media coverage and industry response

When the headlines hit the newsstands, the Tantalum-Niobium International Study Center (TIC) was one of the first organizations to be approached for comment. TIC undertook to inform all its members about the illegal mining in the DRC, to support the removal of miners from the national parks and to discourage processors from obtaining tantalum from regions where the environment of wildlife is threatened (TIC, 2001.b).

The US Electronic Components, Assemblies & Materials Association (ECA) also issued an alert to its 2,100 members, representing 80% of the US electronics industry, regarding allegations of ore extraction from restricted wildlife areas. ECA urged its members to procure tantalum from sources that do not use African ore (2001). This appeal to members produced mixed reactions. Even those who expressed concern did not see how the industry could do anything to help the situation, as responsibility lay higher up the supply chain.

Both TIC and ECA describe their role as to dispense information and encourage ethical sourcing but not to enforce regulations.

In April 2001, Electronic Business News (EBN) asked several companies involved in purchasing tantalum or tantalum capacitors for their reactions. Responses included (Chin, 2001):

- *“You hope your suppliers are doing things legally but beyond that what can you do? Do you expect our suppliers to ask?”*
- *“We don't view the source of tantalum as an issue for us, but more for the capacitor suppliers”.*
- They were *“surprised”* to learn of the situation, they purchased tantalum solely on quality, they did not trace its origin, and they trusted their suppliers to provide tantalum from *“appropriate”* sources.
- The situation was *“inexcusable”* but it was too difficult to trace the origin of ores, so it was up to the Congolese government to control the mining.

German tantalum processor, H.C.Starck, strongly denies claims that it has participated in the illegal exploitation of natural resources in the DRC and states that any material purchased from Africa comes from “*established trading companies that have worked in various African countries for a long time and are headquartered in Europe or the United States. These trading companies have confirmed that H.C.Starck is not being supplied with illegally mined material from Central Africa*” (2001). Allegations against the company were made, again, by the UN Panel of Experts in its third report in October 2002.

US tantalum processor, Cabot Corporation, released a press statement to the effect that it had the highest environmental standards and supported TIC in deploring the mining in DRC’s national parks. The company stated that it purchased the majority of its ore from Australia and Canada but “*a small percentage is sourced from other locations and, to the best of our knowledge, none of this originates from environmentally sensitive areas*” (2001).

In that interview, RCR Wireless News also shone the spotlight on mobile phone companies. Whilst companies could not guarantee that their products did not contain illegal Congolese tantalum, they stated that they were taking the issue seriously, investigating their suppliers, issuing appropriate notification to those suppliers and that they were fully supportive of the efforts of the relevant authorities to protect wildlife (Silva, 2001).

Since then, most companies concerned about the implications of the trade have issued statements to the effect that they have instructed suppliers to avoid purchasing, or to guarantee that they do not purchase, Congolese coltan.

4.4. Verification of tantalum sources

EWA Trading Company website 17/03/03

Looking for large quantities (sic) of Tantalite/Coltan/Culumbite/Ta₂O₅ ore.

“We are importers of Tantalite ore Ta₂O₅. Right now we are purchasing approx. 20-40 tons of Tantalite ore with a purity of min 25% packed in 50kgs plastic double bags. Should made available from international airport (sic) next to mine, we transport by our own aircraft. Origin of ore is secondary, quantity and quality counts!”

If a company only buys direct from a named mine then it can, indeed, guarantee its source. However, any tantalum purchased on the spot market can contain mixed ores. TIC advises that only commercial mines pack and transport ore concentrates in drums marked with their names, otherwise there is no way to tell, chemically or geologically, where the ore originates, and consignments may well contain material from several sources (Chin, 2001).

Alibaba.com website 22/03/01

Sell Tantalite Coltan

“This product is sourced from Congo via Nairobi, Kenya and therefore the price is at Nairobi inport (sic). Specifications: 205>3%-60%. Price terms: USD100-USD250 per kilogram. Quantity: 20 foot container. Packaging: 30 and 50 kilograms plastic bags”

“Avoiding” illegal tantalum, and asking for verifications that, in fact, are virtually impossible to give, may convey the impression of an environmentally responsible corporate stance but will not withstand scrutiny.

Infomine.com Suppliers Forum website 02/09/02

“we have big quantity of coltan at very competitive (sic) price in kigoma Tanzania. whoever interested contact me.”

5.1. Option 1: boycott Central African coltan

5.1.1. The case

The UN Security Council, in its report of November 2001, repeated its call of April that year for a moratorium banning the purchase and import of precious products, including coltan, originating in areas under the control of rebel groups.

The UN has detailed a clear link between the continuation of the conflict in the DRC and the exploitation of mineral resources. Given the known lawless conditions under which coltan is extracted, a ban may be the only way to remove all corporate culpability.

As the market has once again stabilized and production in Australia and elsewhere is being increased in line with demand, corporations can afford to embrace a boycott as the best option until global shortages once again make Central African tantalum tempting.

A bill was introduced in September 2001 in the US House of Representatives to prohibit temporarily coltan imports from certain countries involved in the conflict in the DRC, so there is a precedent for a ban (UN, 2001.d).

This may well be the most acceptable option for the general public as it is a clear-cut decision, which guarantees that the consumer is not participating in

any exploitation of people or wildlife. In the words of one reporter: “Until I can ascertain that none of my phone’s ingredients came out of Africa, I will be haunted by the uncomfortable feeling that I might just as well be carrying around an elephant gun – or a bayonet” (Brady, 2001).

A report was published in January 2002, representing the views of over 30 European NGOs, lobbying for the imposition of a temporary embargo. Leading international corporations using tantalum capacitors such as Alcatel, Compaq, Dell, Ericsson, HP, IBM, Lucent, Motorola, Nokia and Siemens are called upon to refrain immediately from buying components that contain tantalum originating from occupied Congo and its neighbours (IPIS, 2002).

The October 2002 report by the UN Panel of Experts names a large number of companies, which it cites as being in contravention of OECD guidelines. This has caused considerable consternation in many corporations and highlighted the risk of being associated with any business activities in the DRC.

The transition unity government has yet to prove its ability to govern the country. It has to establish international credibility in terms of eradicating corruption and its commitment to deliver justice. Democratic elections have yet to be held. Until such time as these basic requirements are met, engaging in trade or investing in production remains a high-risk option.

5.1.2. The reality

(a) Structural considerations: bans cannot be instituted in a piecemeal or unilateral fashion. Any action taken by the private sector can only be legitimate or effective as part of a concerted and cohesive international action plan, co-ordinated by the UN, which addresses fundamental regional structures and not single issues.

In the first report in 2001, the UN Panel of Experts called for a ban. In the third report at the end of 2002, it was recognized that a ban was untenable and inappropriate.

The UK government All Party Parliamentary Group report states that political and military groups “*have used formal and informal networks, some of which have been involved for decades in widespread fraudulent and illegal exploitation... These systems of exploitation should be completely dismantled to ensure the viability of the peace process.*” (2002)

A ban cannot be effective unless the enabling environment in which the illegal exploitation occurs is addressed. It is reported that any company operating in eastern DRC is obliged to pay large sums of money to the authorities and other warring factions in order to engage in the local economy. Besides providing military groups with funds for arms, this system is clearly unsustainable and, more importantly, does not benefit the social and economic development of the country (APPG 2002, Amnesty International 2003, UN Panel of Experts 2002).

(b) Impact on people: “*For the people of DRC, there is only one thing worse than mining coltan and that is not mining coltan.*” Blaine Harden, correspondent for the New York Times, eloquently describes “*the curiously egalitarian quality*” of an industry that employs artisan miners who need little equipment, who are not employed by a multinational, who (other than bushmeat hunting) do relatively little damage in environmental terms, and who may be exploited at every turn but still make something approximating a living from this mineral (2001). A series of NGO reports has supported this claim that people rely upon artisanal coltan mining for their livelihoods (when other areas of economic activity have been

severely curtailed), and that regulation, rather than a ban, is the only way forward (ICG 2002, Amnesty International 2003, APPG 2002).

There has been a small but legitimate coltan mining industry in Rwanda for decades. This would be destroyed by a ban because the sources are indistinguishable, thus imposing extreme hardship on those miners by depriving them of their livelihood (Redmond, 2001).

The hardship resulting from sanctions severely affects the most vulnerable members of society. Economic pressure causes regular and irregular military forces to be even more parasitic on the people, through forced labour, theft and displacements. Bans could restrict the flow of resources, causing chronic poverty, hunger, illness and mortality (Thompson 2000).

When business income is removed and boycotts are enforced, poverty increases and the struggle to seize control of resources may escalate. Therefore, far from tackling the problem, sanctions may exacerbate the underlying cause.

(c) Impact on conservation: in conservation terms, the question must be whether or not a ban on Central African tantalum would make a difference to bushmeat hunting in the DRC. The answer is likely to be ‘no’. Smuggling would probably continue, miners would continue to mine, and the hunters to hunt. Even if the mining ended, the hunting would probably continue, as it is now a profitable activity in its own right.

(d) Genuine corporate responsibility?: withdrawal of trading relationships are measures typically employed by the private sector to create economic pressure for resolution of issues or to protect corporate reputation. In a conflict zone such action is often taken to avoid funding, hence perpetuating, the conflict.

Supporting a ban would placate a large proportion of the concerned public who have had little access to the background to the story. But extreme caution should be exercised to ensure that adoption of this easier option is not an act of ‘green-washing’. Walking away from the issue could constitute an abdication of corporate responsibility.

The easiest option for companies may be to disengage totally from conflict situations, although in some circumstances a ban may have no positive impact on the people or environment in the region. It may do little more than salve corporate and public consciences.

Business and investment, jobs and salaries, and training and employment are critical to socio-economic stability and to building future prosperity, and yet are amongst the first casualties of war. Just when people need them most, they disappear – often due to censure from pressure groups closer to company HQ.

5.2. Option 2: regulation of the coltan industry in the DRC

5.2.1. The case - the potential impact on the tantalum industry

The DRC is a valuable source of ore for tantalum consuming industries. As the bulk of Australia's and Canada's production is sold in advance to two companies and Asian exports are set to reduce in quality and quantity, African tantalum is of long-term strategic importance, especially to those companies not included within the closed circle of the effective oligopoly.

At present, Congolese tantalum is pulled into the market to fill shortfalls, or it arrives in unpredictable influxes of cheap ore, which distort and obscure trade predictions. Sons of Gwalia speak for many in the industry when they stress the need for “*co-operation and shared responsibility for an efficient and orderly market, in terms of both supply and price*” (Lalor, 2001). Unless Congolese tantalum is included in the development of the market, it will remain a wild card.

Whilst the inclusion of Congolese coltan may not remove periods of market inflation, it will certainly limit the subsequent crash caused by the flood of cheap ore and thereby soften the market correction.

5.2.2. The case – the potential impact on the local economy

The current purchasing practice is highly exploitative. Congolese tantalum acts as an emergency reservoir for the world market, tapped into when regulated supplies are under pressure. This provides no security for the miners, who would benefit far more from a long-term, fixed-price contract such as Australia enjoys, instead of the current boom-and-bust scenario. “*The long-term contracts... enabled Gwalia to invest in the development of long-term tantalum resources*” (Lalor, 2001).

The Mining, Minerals and Sustainable Development (MMSD) project of the World Business Council for Sustainable Development (WBCSD) has reported on how the global mining industry can support development of national economies. There are two key areas to consider within this proposition: the domestic management of mineral wealth and the removal of obstacles to the use of mineral revenues as an effective catalyst for economic and social development.

With coltan as the mineral, and the war as an obvious obstacle, a regulated business initiative could be one of the catalysts needed in the DRC. Within a broader framework of economic rehabilitation, local initiatives that could represent ‘early wins’ are vital to ensure that indigenous communities can benefit from stability as quickly as possible. In the absence of such tangible benefits, communities are highly vulnerable to being drawn back into a cycle of poverty and exploitation.

KEY REPORT

Mining, Minerals and Sustainable Development, IIED & WBCSD, 2002

Breaking new ground

Timing is critical. Despite continuous and significant difficulties, the current political situation in the DRC does represent progress. It is absolutely essential that the international community acts swiftly to support the reconstruction of the Congolese social

infrastructure. Care must be taken to ensure that funds and expertise are employed to build capacity, not dependence.

5.2.3. The case – the potential impact on wildlife

The Congolese people also have the right to a reliable food source that does not reduce their future capacity to use their wildlife and forests to generate income from ecotourism, game ranching, medicinal research and sustainable harvesting. Dependence on bushmeat today is eroding the possible contribution that wildlife could make tomorrow.

The DRC's national parks are an enormously valuable part of its heritage and its future. The long-term plan for regulated coltan mining would have to work towards the gradual removal of the miners from key wildlife habitat.

The World Wide Fund for Nature (WWF) has developed a series of criteria and indicators for helping to make decisions about the suitability of prospecting for, extracting, transporting, processing and disposing of oil and other minerals in sensitive environments. Its decision tree consists of three filters, focusing on (i) protection status, (ii) potential threats to biodiversity and the environment at both the site and landscape (downstream) level, and (iii) potential threats to vulnerable human communities.

WWF suggests that mineral activity should not take place in the following places:

- Highly protected areas including UNESCO World Heritage sites
- Proposed protected areas within priority conservation areas
- Areas containing the last remaining examples of particular ecosystems or species even if these lie outside protected areas
- Places where mineral activities threaten the well-being of communities including local communities and indigenous peoples.

KEY REPORT

WWF International & WWF UK, 2002

To dig or not to dig?

Criteria for determining the suitability or acceptability of mineral exploration, extraction and transport from ecological and social perspectives

There have been other specific initiatives by conservation agencies. For example, the Dian Fossey Gorilla Fund held a meeting in Durban in July 2003 with a select group of actors in and around the Kahuzi-Biega National Park. The meeting recommended the dissemination and enforcement of the national mining code, legislation on coltan mining, and support for alternative income-generation activities.

In order truly to exercise corporate environmental and social responsibility, any company doing business with potential impact on forests or protected areas in the DRC must predicate its involvement on two key issues. The first is ensuring that workers rights are upheld and that this is extended to those working at all stages of the production supply chain for companies purchasing raw or lightly processed materials. This must include the assurance of adequate food supplies for workers but the policy must stimulate rather than replace local agricultural investment, support rather than undercut local farmers and encourage independence for the future. The second is not to carry out any activity that undermines enforcement of existing legislation prohibiting hunting of endangered species, with independent spot-checks.

Regulation of the coltan mining industry would assist with the return of law and order and the recommencement of national park patrols, which would facilitate both of the above. Any initiative must be undertaken as part of the existing framework of national and international support to the Institut Congolais pour la Conservation de la Nature, the legitimate protected area authority.

5.2.4. The rationale

Despite the official peace agreement, the east remains in a state of instability and violent conflict. Working in conflict zones is fraught with pitfalls. Formal acknowledgement by credible bodies and external financing by multinational corporations can lend legitimacy to military factions who lever such relationships to manipulate the truth, generate propaganda, identify and silence opponents and obstruct projects that are not profitable (Thompson, 2000). Companies trying to do business in a conflict zone will frequently end up paying taxes, bribes and protection money to government troops or rebel forces, with the risk that this becomes sufficiently lucrative to be a factor in prolonging the conflict (Dowden, 2000).

War as ‘the pursuit of politics by other means’ was redefined by David Keen as ‘the pursuit of *economics* by other means’, which more accurately reflects the nature of many modern, complex conflicts (Keen, 1995). Such wars are not therefore fought with the intention of winning a moral or political victory, rather they create a situation in which groups can engage in profitable crime under the cover of warfare. But in such a conflict economic incentives may just succeed where other intervention efforts fail.

Paul Collier, Director of the Development Research Group, World Bank, corroborates this proposition in his analysis of the economic causes of civil conflict. Where rebellion is centred upon control of resources, rebel organizations can be viewed as rational economic agents and are likely to respond to incentives (Collier, 2000).

Economic sanctions can be self-defeating. A successful embargo will raise the price of imports to the target country, creating the conditions for a black market to thrive. An injection of business incentives, in contrast, will work in harmony with the natural forces of the market and is more likely to deter opportunistic trading and assist in maintaining a balanced economy. Whereas negative sanctions impose losses, trade incentives generate benefits for both parties in the transaction – a classic win-win proposition (Cortright, 1998).

It would be simplistic to suggest that there is a linear continuum of conflict ► economic development ► peace. Causal relationships cannot always be established. Even if prosperity does contribute to peace, unequal distribution of the new wealth or failure to strengthen social capital and civil institutions will fuel further unrest and degeneration back into conflict (Nelson, 2000). But there is a link.

Warring parties require the financial support of outsiders. Often these outsiders are ‘investors’ likely to seek a short-term, high-profit economic return for their support (Simillie *et al.*, 2000). By its very nature, engagement predicated purely on profit-seeking motives will inevitably perpetuate rather than resolve the conflict.

Herein lies the critical element of this proposition: the profiteering component of short-term speculation must be removed. The ‘investment’ needs to be little more than the payment of a fair price for legitimate goods, in full view of the marketplace, in order to neutralize the exploitation.

If this is harnessed with a commitment to genuine investment in local workers, environmental protection and development projects, it may provide a modicum of local stability in support of the national peace process. For this to work, all parties must have a stake in its success (Maresca, 2000a).

We need to move the strategy from doing business *because* of war to doing business *despite* war, and on to doing business *instead* of war (Hicks, 2002).

Artisanal and small-scale mining (ASM) is often considered by governments to be illegal and attempts are made to ban it through different means. In many cases (as ASM falls outside the regulatory framework) they simply neglect it, thereby allowing negative social and environmental impacts to be aggravated. In only a few cases has this part of the mining sector been supported and regulated successfully (MMSD, 2002).

The challenge posed by the establishment of legitimate and regulated ASM in the DRC cannot be overstated. However the challenge must be met with international commitment and resources – coltan is just one mineral in a much broader problem, which

will require a comprehensive initiative. It may, however, be a viable starting point.

5.2.5. The reality

The DRC has suffered decades of exploitation that has not benefited the vast majority of the population. In recent years, owing to competition between foreign and national armed groups, the socio-economic base of the local population has worsened considerably. The political and economic system needs to be reformed in order that the structures underpinning this exploitation are permanently dismantled (APPG, 2002).

If this does not happen, the population and the environment will continue to be destroyed. Explicit details of the suffering, especially in eastern DRC, have been in the international public domain for over three years. Excuses for doing nothing are dwindling.

There are huge challenges for the international community, not only the United Nations, western and African governments, and the NGO community. Private companies have to play a key role by challenging those companies down the supply chain that are involved in the production and trade of coltan from the DRC. They have to ensure that there is a framework of regulation for coltan production that upholds human rights and environmental protection.

5.3. The proposition

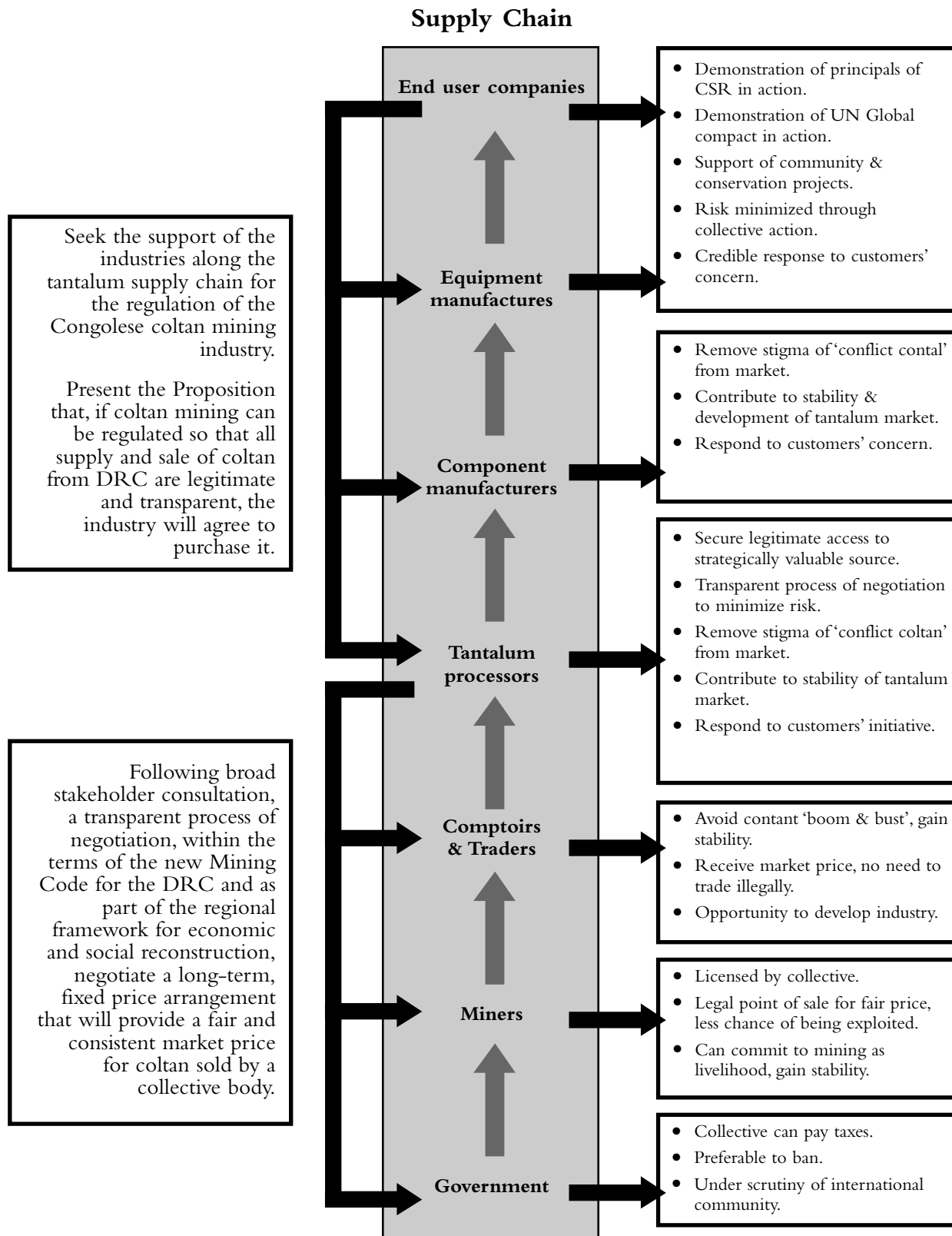
That tantalum-using industries will commit support, and galvanize other parties along the tantalum supply chain to commit support in turn, to the creation of a market for tantalum, mined under socially and environmentally responsible conditions.

This would be transparently negotiated with a broad range of stakeholders under the terms of the new World Bank Mining Code for the DRC and with direct reference to other agency mechanisms including the Poverty Reduction Strategy, the DDRRR process and the Great Lakes post-conflict reconstruction plans as well as the efforts of local and international NGOs.

This will benefit all parties because:

- A politically neutral business opportunity for artisan miners could contribute to the region's stability and prosperity. If market price is offered at legitimately monitored purchasing stations, then there is no incentive to sell coltan illegally for a lower price.
- Alternately exploiting and ignoring coltan does not permit the development of a stable industry in the DRC. A transparently negotiated trade deal would support the Congolese economy and generate sustainable livelihoods for local communities with related redevelopment of agriculture and other support economic activities.
- Civil peace is essential for the resumption of park security enforcement in order that conservation bodies can resume research and anti-poaching measures.
- Tantalum-using industries will be seen to respond to customers' concerns in an innovative, pro-active, minimum-risk, group initiative, which supports the work of the United Nations and the World Bank.
- Congolese tantalum is too valuable a supply to be used as an occasional stopgap. It is in the tantalum industry's interests to gain legitimate access to a regular supply and to contribute to the stability of the international market.

Figure 5. Supply chain: actions and benefits



5.4. Further institutional engagement

5.4.1. United Nations

The third report by the UN Security Council Panel of Experts on resource exploitation in the DRC was the most thoroughly researched and validated of the reports to date. It includes case studies on coltan, which assert that demand for Congolese coltan continues due to the low labour costs of extraction.

The Panel's recommendations focus on the creation of a 'peace dividend'. In other words, *"a set of agreements or initiatives on reconstruction and sustainable development are needed to address the economic dimension of the Lusaka peace process and provide incentives for continuing progress. The first set of initiatives could be ... aimed at creating jobs, rebuilding infrastructure and improving conditions for local populations, notably in the areas of education, health, water and sanitation."*

The report also notes that reforms of the mining and the forestry sectors should include the review of all concessions and contracts signed during both wars. A resolution adopted during the inter-Congolese dialogue, establishing a special commission to examine the validity of economic and financial agreements, could serve as the framework for this process. The international community, including the World Bank, the International Finance Corporation and UNDP, could collaborate closely with this commission and provide expert advice and technical assistance, part of which could be focused on raising long-term international investment for the rehabilitation of the mining and forestry sectors and sustainable revenue generation.

Mechanisms for monitoring the trade in illegal commodities such as coltan, and including the trade in endangered species of fauna and flora, are also recommended.

This is an ideal opportunity for tantalum-using industries to demonstrate their commitment to the work of the United Nations by submitting a proposal for consideration.

The Panel has been requested to continue its investigations, and a fourth report is due to be released in the autumn of 2003. This will include further recommendations for companies, governments and agencies in the extractive industries.

5.4.2. New mining code for the DRC

A new mining code for the DRC has been developed by the government of the DRC and the World Bank. The new code replaces the old system so that henceforth exploration and mining rights are negotiated on a case-by-case basis, with a licensing system that provides for greater transparency. Exploration rights will be granted on a first-come-first-served basis to eligible applicants who can demonstrate that they have sufficient financial resources. Unlike in the past, the regime to be ushered in by the new code will give exploration and mining companies greater security of title. The proposed DRC legislation also contains principles of the Tanzanian, Argentine, Peruvian and Chilean mining codes, which created massive benefits for these countries' mining sectors. (Zhuwakinyu, 2001). The World Bank will consider funding capacity-building projects to enable the DRC to enforce the new mining legislation.

With the establishment of the Government of National Unity the coltan belt now falls within the code's jurisdiction, and the application of its principles to artisan and small-scale mining in eastern DRC is essential. Coltan must be legitimized within the new national framework. Inherent in this proposition is a move away from short-term considerations, towards development for the future.

5.4.3. Lessons to be learned from Angolan diamond regulation

In order to consider how a regulated coltan industry could operate, consideration was given to Angola's diamond certification scheme, which seeks to trace legitimate diamonds and exclude illicit gemstones from legal trade. It is useful to note the key issues that the Angolan experience identifies:

- The importance of bringing illicit miners into the system, improving their social conditions and controlling their activities
- Licensing and control of diamond middlemen who otherwise constitute the weakest link in the ethical supply chain
- The capacity to investigate and arrest illicit dealers, which is linked to stability, political will, transparency and collective acknowledgment of the benefits to the majority of legal trade compared to the negative impacts of sanctions

Effective control on the ground is a clear priority for the credibility of the certification scheme, although implementing this requires relatively long-term measures. Angola is turning itself into a test case for the possibility of bringing illicit mining and buying under control, and if this can be done in Angola, the experience will be repeatable elsewhere in Africa.

(Extracts from United Nations Security Council. Supplementary report of the Monitoring Mechanism on Sanctions against UNITA. S/2001/966. October 8 2001.)

Industry Position and Response: A Theoretical Approach

6

Having considered the practical implications of supporting the regulation of the coltan mining industry in preference to supporting a ban, it is worth stepping outside the situation to gain a less applied and more theoretical view of the options. This is also valuable in ensuring a comprehensive and dispassionate, rather than reactionary, analysis.

6.1. The tantalum end-user industries' position along the supply chain

No single sector or industry is solely responsible for the atrocities committed by the exploiters of coltan. However, linking coltan to tantalum end-user industries, particularly the electronics industry - the preferred target of the media, is an easy accusation through association because:

- the electronics industry is a key consumer of tantalum capacitors, which is the primary use of tantalum, and
- products such as mobile phones, PDAs and cameras are small, personal, commonplace devices to which most people can easily relate and which are comparatively disposable or replaceable

Some responsibility, however, must be acknowledged. Whilst the western world may not be directly responsible for the current conflict in the DRC, the international community has, however unintentionally, encouraged it by purchasing the 'spoils of war'. The fact that coltan has a role in the

human conflict and wildlife tragedy played out daily is undeniable.

Responsibility for conflict, and the risk associated with business activities in conflict zones, can be mapped on a scale in relation to the position of a company along its supply chain (Nelson, 2000). If we apply this to coltan, the responsibility of the tantalum end-user industries for the actual situation on the ground is minimal. This confers relative freedom in determining the level of response that these industries might choose - they are not *obliged* to engage at the deepest level as they are not implicated at that level.

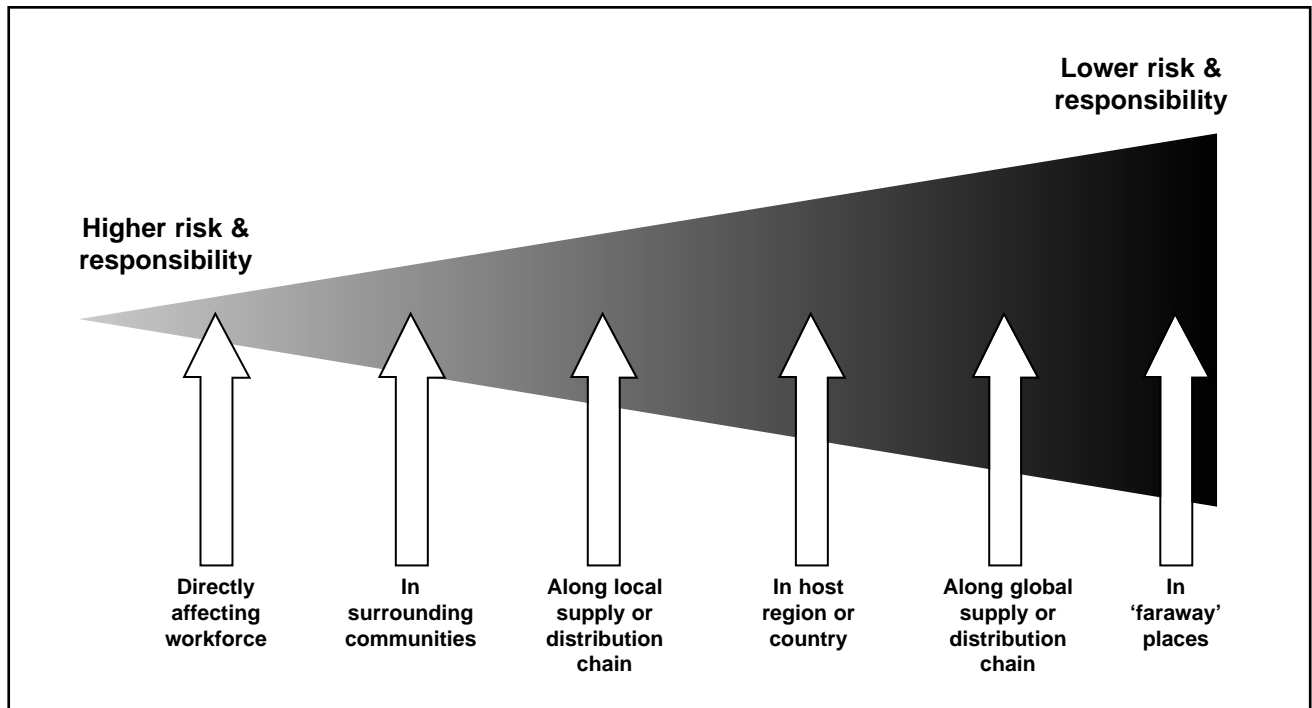
6.2. Spheres of influence

Businesses have three distinct spheres of influence in which they can manifest their commitment to corporate social and environmental responsibility (after Nelson, 2000).

The central core is the decision to engage in policy formulation and institution building with industry or governmental bodies. This includes promoting ethical business practices and good governance as well as contributing to the formulation of standards for social and environmental performance. This is, in effect, to articulate *'what we should do'*.

The next sphere is in relation to the company's own activities and the manifestation of its ideals and principles. This is about core business activities and performance in both the workplace and the marketplace. It involves consideration of and

Figure 6. Supply chain: levels of risks and responsibilities



responsibility for the company’s supply chain and its sourcing, producing and distributing of products and services. This can be loosely described as *‘what we are going to do’*.

And finally, in companies that not only recognize and implement the standards needed with regard to their own actions, ‘corporate responsibility’ moves beyond policy, beyond practice, and into social investment. This can be demonstrated as financial philanthropy, in-kind support, operating in partnership and supporting community capacity building the business. Such a company is demonstrating that its commitment is credible – it is *‘doing it’*.

6.3. Strategic levels of engagement

Having identified the areas that the business can influence, the next decision is to determine the level of engagement that the company feels is appropriate:

Compliance: this is the basic, minimum requirement of adhering to regulations. Even if host

governments and other companies fail to effectively implement acceptable standards, a responsible company should benchmark its practice against international conventions and perform in an exemplary manner.

Risk minimization: beyond basic compliance, companies can have significant negative socio-economic, political and environmental impacts. Analysis of these impacts will contribute to the development of policies to minimize damage resulting from business activities.

Value creation: beyond compliance and doing minimal harm, companies can proactively create positive societal value. Activities that create value include innovative social investment, stakeholder consultation and collective action.

Companies can act independently or as an industry. The focus of actions can be to ensure basic legal compliance, to minimize impact on the environment and therefore operational risk, or to create value within any or all of those spheres.

There is a strong case to be made for collective action. Not only does this spread the business and reputational risk, but it also creates a stronger and more persuasive voice for reform or action and removes the individual profit-seeking element that could call into question the validity or motive of a single company.

6.4. Chronological list of actions taken by the Global e-Sustainability Initiative, Vodafone, and Fauna & Flora International in 2001-2003

1. Research was initiated by Vodafone and Fauna & Flora International (FFI) in November 2001 to establish key facts about the situation and consider the role of the telecommunications industry.
2. The first report was submitted to GeSI in January 2002 and a presentation was made to members in Paris in April. All members were in agreement that the issue should be presented to the wider UN body, the Global Compact.
3. Findings and recommendations were presented to the Global Compact in May 2002 as part of the UN Investment in Least Developed Countries Initiative.
4. FFI met with representatives of the Tantalum-Niobium International Study Center, H.C.Starck, UNESCO and the Belgian government in Brussels to discuss different perspectives on the issue.
5. FFI attended a meeting in Nairobi in July 2002 with key conservation organizations working as part of the UNESCO/UNF World Heritage Sites in Crisis group in eastern DRC to ensure that recommendations being made are appropriate to the broader framework of conservation priorities for the region.
6. FFI met with the UN Panel of Experts in Nairobi, also in July, to ensure that recommendations for a regulated coltan mining initiative were in line with the Panel's view of reconstruction priorities.
7. FFI joined the UK All Party Parliamentary Group (APPG) to contribute to research and policy recommendation development for the UK government and to ensure that environmental considerations are taken into account in political and social planning. It was regarded as being particularly important that the ideas presented in this paper were presented to the key international humanitarian organizations advising the APPG, as conservation activities are inextricable from humanitarian concerns.
8. Through the APPG, FFI has engaged in dialogue on resource exploitation in the DRC and presented the proposals to Amnesty International, Christian Aid, Global Witness, Human Rights Watch, International Crisis Group, Oxfam, Save the Children and Warchild.
9. The proposition of regulated mining supporting investment in peace in the DRC was presented by FFI to a Heads of State Round Table on the Global Compact's Investment in Least Developed Countries initiative in September 2002. Present were six Heads of State (of Algeria, Canada, France, Nigeria, Senegal and the UK) and key representatives of UN bodies (including Secretary General Kofi Annan, Mark Malloch Brown, Director of UNDP, and the High Commissioner for Human Rights, Mary Robinson) as well as other NGOs and corporate CEOs.
10. FFI went to Kinshasa in October 2002 to hold discussions with key Congolese actors in this initiative including:
 - the Director of the President's Social Fund for the DRC
 - the then Minister for Mines & Hydrocarbons
 - the then Minister for Forestry, Tourism & the Environment
 - the Director of the Institut Congolais pour la Conservation de la Nature
 - the then Minister for Industry
 - the Federation Entreprise Congolaise

As a result of this visit, FFI secured a written MoU from the Minister of Mines & Hydrocarbons to enter into a dialogue to determine how biodiversity considerations would be incorporated into the granting and monitoring of mining concessions.

11. In November 2002 FFI held meetings with the Foreign and Commonwealth Office to propose that this initiative could gain UK government support.
12. In December 2002, FFI attended the World Bank Donors Meeting for the DRC in Paris, at which time FFI met with the temporary Ministers for Mines & Hydrocarbons and for Forestry, Tourism & the Environment. It was recognized, however, that new ministry appointments would be made under the transition unity government, and therefore dialogue was a courtesy rather than a new stage of commitment.
13. In December 2002 FFI discussed with the Head of the World Bank Mining Unit the potential for a coltan initiative to act as a pilot project for the new Mining Code in eastern DRC.
14. Also in December 2002 FFI made a presentation to a World Bank Conflict Prevention and Reconstruction Unit meeting on natural resource exploitation and war economies, which involved UN bodies, the OECD, NGOs and various specialist groups.
15. The principle of creating links between the conservation organizations working in the DRC, the government and the private sector has been approved by the UNESCO/UNF co-ordination body and project development commenced in December 2002 to dovetail with work being carried out on natural resource management and local 'pacification commissions' in eastern DRC.
16. FFI held meetings and presented the proposition to the Department for International Development, including the then Secretary of State, Clare Short. In February 2003 FFI shared a platform with Ms Short to discuss UK policy on the DRC and to promote the need for investment in sustainable and responsible natural resource management support. GeSI members' willingness to engage with policy making was highlighted.
17. Vodafone presented the issue at a supply chain management workshop in February 2003 to raise awareness and encourage commitment beyond the GeSI membership.
18. The initiative is to feature as a case study in a forthcoming publication by the International Finance Corporation on businesses managing their impact on biodiversity.

Conclusions and Recommendations

7

1. All tantalum-using industries should recognize that there is undoubtedly a direct relationship between the illegal exploitation of coltan and the conflict in the DRC.
2. Tantalum-using companies, individually or collectively, should determine the level of response to the coltan mining issue that is most appropriate and feasible. The key factors influencing this decision should be:
 - 2a. All user industries bear some responsibility, albeit distant, for the situation.
 - 2b. The issue will recur as long as Congolese coltan continues to be traded.
 - 2c. Denials of any purchase are, for the majority, impossible to substantiate.
 - 2d. The UN is seeking routes to resolution and will be responsive to input.
 - 2e. The potential balance between risk, resources and rewards.
3. Rather than being a threat, the coltan crisis should be seen as an opportunity to engage with a complex issue using an innovative approach, which will be an exemplary demonstration of collective corporate social responsibility. Tantalum-using industries can employ their:
 - 3a. Influence: along the supply chain to either conform to a ban or support an exploration of the potential of a regulated coltan mining industry.
 - 3b. Peer pressure.
 - 3c. Political support.
 - 3d. Finances: to support community and conservation projects as part of a greater scheme of investment for stability and development
4. The most critical issue, now, is timing. Though it was impossible to initiate activities beyond dialogue under previous political conditions, support for the Congolese reconstruction process under the Government of National Unity is now timely and urgent.

To this end we propose that:

 - 4a. An appropriate international organization supporting a partnership approach to corporate social responsibility (CSR), eg. the UN Global Compact, should circulate this report widely to tantalum-using industries and other relevant institutions, and hold a meeting to gain wider support for the initiative.
 - 4b. At this meeting a multi-stakeholder group should be formed to advance the initiative.
 - 4c. This group should comprise the Government of the DRC, civil society and non governmental organization (NGO) representatives, the private sector, and international agencies, including the World Bank Mining Unit and the Country Director for the DRC.

- 4d. The group should correspond directly with the UN Security Council, the UN Development Programme and the UN Panel of Experts to propose the initiative as a component of DRC reconstruction planning.
- 4e. The group should also correspond directly with government trade and development departments to advise them of the initiative.

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