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Fortunes of war: the coltan trade in the Kivus

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Abstract

This study places the micro-level patterns and structures of the trade in ‘coltan’ – a form of tantalum ore – in the context of the war economy in the eastern Democratic Republic of Congo (DRC). Drawing on field research, it tracks a cycle of boom and bust in the world price of tantalum. Locally, the boom – a ten-fold price increase – incited ‘coltan fever’, an exodus from agriculture into mining in rural areas of the eastern Kivu provinces and the ‘dollarisation’ of rural and urban economies. The bust – a ten-fold price crash – did not cause the trade to cease but to consolidate, further increasing the domination of war entrepreneurs. The present war in the DRC did not begin with explicitly economic objectives. Rather, as the war reached a stalemate nationally, so belligerents turned inwards to the territory they control, capitalising – personally as well as collectively – on the rich resources available. Coltan both finances violence *and* provides an incentive for it. However, mining has also become a major survival mechanism for people at the grassroots. This, together with the convoluted nature of the coltan commodity chain at its upper levels, means that a global boycott is both unwise and difficult to implement.

1. Introduction and methodology

Considerable research has illuminated the macro-level nature of the war economy in the Democratic Republic of Congo (DRC). This study seeks to add to available literature at the micro level, detailing the war economy's impact on ordinary people's livelihoods beyond the obvious but compelling statistic that more than two and a half million have lost their lives (IRC, 2001).[1] Existing macro studies have tended to damn the war economy out of hand, focusing on how profit prolongs the conflict and recommending sanction without considering the likely negative impacts on survival livelihoods already under very considerable stress.

Drawing on field research, this chapter tracks a cycle of boom and bust in the world price of tantalum. Locally, the boom – a ten-fold price increase – incited 'coltan fever', an exodus from agriculture into mining in rural areas of the eastern Kivu provinces and the 'dollarisation' of rural and urban economies. The bust – a ten-fold price crash – did not cause the trade to cease but to consolidate, further increasing the domination of war entrepreneurs. The present war in the DRC did not begin with explicitly economic objectives. Rather, as the war reached a stalemate nationally, so belligerents turned inwards to the territory they control, capitalising – personally as well as collectively – on the rich resources available. Coltan both finances violence *and* provides an incentive for it. However, mining has also become a major survival mechanism for people at the grassroots. This, together with the convoluted nature of the coltan commodity chain at its upper levels, means that a global boycott is both unwise and difficult to implement.

Key issues addressed include:

- The evolving structure of the coltan commodity chain, from digger through intermediaries to the international market.
- The penetration of this chain by entrepreneurs of violence: Congolese, Rwandan and international.
- The mutations in rural and urban livelihoods caused by the conflict in general, and the cycle of boom and bust in coltan in particular.

The study concludes with brief remarks on the implications for political, diplomatic and humanitarian policy towards the DRC and its neighbours.

The methodology was predominantly ethnographic, combining interviews with observation during three periods of field research in September 2000, July 2001 and April 2002. As a bottom-up study, this research examined the interface between the lower links of the coltan commodity chain and other elements of rural and urban society in the Kivus. Interviews began with general discussions of livelihoods before inquiring about particular commodities or actors. Interviews were cross-checked with local and international agencies researching the same area. Plans to extend this study with a local research team were prevented by logistical difficulties, serious harassment by rebel authorities and the irreplaceable loss of field materials in the January 2002 volcanic eruptions in Goma.

The whole DRC is characterised by an institutionalised and consolidated war-based economic exploitation. One major criticism of the first (April 2001) UN Panel of Inquiry Report was its seeming partiality in singling out war economics in Rwandan- and Ugandan-controlled territories of eastern Congo, leaving relatively undiscussed the economisation of violence in the west, controlled by Laurent Kabila with the backing of Angola and Zimbabwe. Why, then, focus this study on the Rwandan-controlled Kivus? First, they are this researcher's zone of expertise. Second, access to the Kivus was relatively secure compared to more contested parts of the country. Third, in southern North Kivu province, the commoditisation of war is particularly stark around a small number of commodities researchable with relative ease. Nonetheless, there is war-based economic exploitation on *all* sides, and this case study begins by placing coltan within the national war economy.

Inquiring into war economies is necessarily sensitive. But surprisingly, it was easier to ask questions about coltan than first feared. Many NGOs are understandably nervous about this kind of research project. Without wishing to underestimate the risks to programmes and people, it is suggested that these topics can be covered with an acceptable degree of safety. The successful programming of aid hinges on an understanding of the Congolese war economy. NGOs must, therefore, develop a capacity to ask the necessary questions safely, both for themselves and for others.

2. The war economy of the DRC

The Zaire of President Mobutu Sese Seko became a by-word for an idiosyncratic corruption and ingrained economic resilience known as '*débrouillez-vous*' ('fend for yourself'). Around borders in particular, trading networks generated profits for the wealthy and well-connected, and also provided basic livelihoods for those at the grassroots (MacGaffey, 1986, 1988, 1991, 2000; De Boeck, 1996, 1999). So predominant did this kind of activity become that terms like 'unofficial economy' or 'second economy' start to look inadequate: 'What is the use of distinguishing between formal and informal or parallel economies when the informal has become the common and the formal has almost disappeared?' (De Boeck, 1996: 91). Digging for minerals was an early area of opportunity. Mining during the colonial period and the early Mobutu era had been capital-intensive, industrialised and producer-driven. However, the 'liberalisation' of production and marketing in the late 1970s meant that the individual, artisanal production of diamonds, gold and other commodities grew more widespread.

Conflict has bent this spirit of making-do to the business of violence, and the DRC has become the epitome of an 'economy of war'. War has afflicted the Kivus since 1993, and the DRC as a whole since 1996. The present, so-called 'second war of liberation' broke out in August 1998 when Rwandan- and Ugandan-backed Rassemblement Congolais pour la Démocratie (RCD) rebels launched a campaign to replace their former ally Laurent-Désiré Kabila as president of the renamed Zaire. Initially there were three stated imperatives: the suppression of insurgency movements operating from Congolese territory; the defence of the small but significant Congolese Tutsi population; and the overthrow of Kabila and his 'Katangan clique'. This war reached a stalemate with an effective partition of Congolese territory between the east (rebel-controlled) and the west (Kabila-controlled). This was thanks to military support from Angola, Chad, Namibia and Zimbabwe; proliferating splits within the RCD; a divergence in strategic objectives between Rwanda and Uganda, resulting in major confrontations on Congolese territory; and the mutation of political and military objectives into economic ones. Of the rebellion's original goals, only Rwandan security against insurrection has been achieved, at the price of exporting the problem to eastern DRC. Locally, war has never came to a halt. Maintaining the Kivus as a violent buffer zone, Rwanda gains internal security while individuals in Kigali and the Kivus profit enormously from the mineral wealth within the war economy. The humanitarian consequences have been extremely grave. Over four years, the war in the DRC has claimed more lives 'than have died in all of the other wars in the world combined over this period' (IRC, 2001:19).

Based on Le Billon's (2000) categorisation, the broad features of the Congolese political economy of war can be summarised as follows:

The war economy

- Domination of primary resource extraction, intermediary activity and export – including gold, diamonds, tantalum, niobium and tin ores, tropical hardwoods and coffee – by military and militia actors backed by regional powers and multinationals.
- Military occupation of the eastern half of the DRC financially sustained by part of the profits realised from the exploitation of these resources in a 'self-financing war'.
- Forced labour and/or prisoner labour in mining controlled by military or militia forces.
- Asset-stripping in the early stages of the war by combatant armies.
- Mineral contracts concluded with multinationals in return for financial support in the early stages of the 'first liberation war' of 1997.
- Exchange of mineral wealth for drugs and guns (International Commission of Inquiry, 1998).
- Economically-motivated militia activity through the organised exploitation of mineral wealth, the looting of villages and individuals and intra-militia fighting over resources.
- Long-term dollarisation of the urban economy; more recent dollarisation of mineral-rich rural areas.

Collateral impacts of war

- Abandonment of agricultural production stimulated by 'coltan fever'.
- Diminished agricultural production because of insecure access to fields.
- Destruction of the longstanding cattle-ranching industry in the Masisi, North Kivu Province.
- Blocked access to towns and markets because of degradation and/or destruction of major routes: concomitant reduction in supply of produce to those markets, leading to increased prices and greater food insecurity in towns.
- Considerable heightening of popular anti-Rwandan, anti-Tutsi and anti-Congolese *rwandophone* sentiment as a result of Rwanda's involvement in 'illegal' resource exploitation.
- Greatly increased sexual violence (Human Rights Watch, 2002).
- Almost total international donor disengagement from the eastern DRC since the late 1990s. This has particularly affected middle-class town dwellers dependent on aid salaries.

Economic strategies of war

- Strategic military objectives increasingly realigned towards capture of major mineral deposits.
- Instances of collaboration and economic alliances 'across the lines' in the exploitation of resources.
- Rebel-controlled monopoly in the purchase and export of tantalum ore (subsequently abandoned).
- Militia forces progressively turning from ethnic protection to protection-racketeering and economic exploitation of populations and resources.
- A systematic and intimate relationship between economics and military activity in the DRC (UN Panel of Inquiry, 2001a, 2001b, 2002). In a trenchant and concise statement the first UN Panel report states that there is a 'vicious circle' of war. Amongst other commodities, coltan:

has permitted the Rwandan army to sustain its presence in the Democratic Republic of the Congo. The army has provided protection and security to the individuals and companies extracting the mineral. These have made money which is shared with the army, which in turn continues to provide the enabling environment to continue the exploitation (UN Panel of Inquiry, 2001: Paragraph 130).

2.1 Macro and meso levels of the war economy

Late President Laurent-Désiré Kabila concluded deals with Western mining interests even before attaining power in Kinshasa, granting access to diamond and copper reserves in the south and south-east (Willame, 1999). Zimbabwe has been among the major beneficiaries. The first UN Panel report found that Kabila 'gave strong incentives in the form of access, exploitation and management of mineral resources [that] "convinced" the Zimbabwean authorities to remain engaged in the Democratic Republic of the Congo' (2001: para 170). The director of Congolese mining concern GECAMINES, a close friend and business partner of Zimbabwean President Robert Mugabe, acted for Zimbabwean and foreign interests, which won lucrative contracts in return for vital Zimbabwean military support. GECAMINES even made direct payments to the Zimbabwean military in Katanga.

The mineral sector is only one part of 'the powerful and intricate corporate web created over the past few years by Zimbabwe's ruling party, Zanu-PF, and the Zimbabwe Defence Forces, in an attempt to capture both foreign and domestic state and private assets. This network has presumably been created to enhance the personal wealth of those involved, to maintain Zanu-PF's power base and to recoup some of the costs of Zimbabwe's chaotic military intervention in DRC' (Global Witness, 2002). Operation Sovereign Legitimacy (OSLEG), the corporate entity created by the Zimbabwean Defence Forces, has negotiated a large Congolese logging concession, comprising some 33 million hectares of forest, or 15% of Congo's total land surface. This deal goes ahead even if peace negotiations (presently moribund) lead to the withdrawal of foreign troops. A number of Zimbabwean officers have been suspended from duty on charges that they organised a million-dollar racket in which food meant for their forces in Congo was diverted and sold on the black market (Zimbabwean Financial Gazette, 2002). The DRC government finances rations for Zimbabwean troops fighting in the DRC, so this dealing comes at Kinshasa's expense.

Since 11 September, connections between Zimbabwe's part in the Congolese war economy and the al-Qa'eda network have emerged. Reports suggest that Lebanese intermediaries have sold Congolese diamonds to known al-Qa'eda operatives (Farah, 2001). Some diamonds originated from Rwandan-controlled Kisangani; others from Zimbabwean-controlled areas or those with ambiguous status. Some analysts suggest that a US foreign policy shift against Zimbabwe (and Rwanda) towards Uganda indicates a belief that Zimbabwe could not control this flow, even if it was willing to try.[2]

While Zimbabwe clearly has no strategic reason for involvement in Congo, Angolan claims for strategic self-interest carried some weight, at least until the death of UNITA leader Jonas Savimbi in February 2002. Although some mineral contracts favourable to Angola were struck, they were minor by comparison with Zimbabwe's (UN Panel of Inquiry, 2001). Despite Savimbi's death, it is too early to write UNITA off as an *economic* actor in the war economy. The long-term connections between Congolese and Angolan diamond smuggling have been well-researched (De Boeck, 1996).

Namibia has finally stopped denying involvement in the war economy. Namibia's mining minister has admitted that the country was part of a joint venture with an unnamed US company and the DRC government. The Namibian corporation concerned, 'August 26', a holding company belonging to the Namibian Defence Forces, lists the chief of the army, the deputy inspector-general of police and the head of the Namibian Internal Revenue Services as board members, together with the Belgian Honorary Consul to Namibia – himself a local director of international arms brokerage firm ACS International (Grobler, 2001).

For Uganda, the principal commodities concerned are gold, tantalum, diamonds and oil (see Table 1 overleaf). According to government figures, annual gold exports from Uganda doubled between 1998 and 1999. Ugandan production, however, remains insignificant. Tantalum exports increased more rapidly, by a factor of 27 from 1997 to 1999. Niobium was unknown as a Ugandan export until 1997, after which its value quickly climbed to three-quarters of a million dollars. Diamond deposits are unknown in Uganda. The rapid increase in these lucrative exports can only represent minerals filtering back from the DRC to Ugandan syndicates. It is no coincidence that 1997 saw Ugandan troops on Congolese territory for the first time.

Reports strongly suggest that population displacement around Ugandan-controlled Ituri has had much to do with clearing territory for gold exploitation. Ituri, the scene of vicious clashes between 'ethnic' militias, is also the location for a major new development in the economy of war: the concession to Canadian company Heritage Oil of a stretch of 30,000 square kilometres along the Ugandan–Congolese border (Die Tageszeitung, 2002). This concession has officially been granted by Joseph Kabila in Kinshasa, even though Ituri is under the control of the RCD-ML (the Ugandan-aligned RCD). Peace talks in Sun City, South Africa, produced a new and unstable realignment between Kabila, the RCD-ML and Jean-Pierre Bemba's Mouvement de Libération du Congo (MLC) rebels, who are also Ugandan-backed. The OSLEG logging deal is, apparently, the first fruit of this new relationship. However, even as it was being negotiated, tensions were mounting between the RCD-ML and the MLC concerning key diamond and gold mines around Watsa, some 1,800km north-east of Kinshasa (MISNA, 12 June 2002).

Rwanda's security buffer zone in eastern Congo pays for itself: President Paul Kagame describes this as a 'self-financing war'. The UN Panel estimates an annual cost of $51.6m for

Table 1: Ugandan mineral exports and domestic production (1994–2000)

Year	Gold exports (tons)	Gold production (tons)	Coltan production (tons)	Coltan exports (tons)	Niobium exports (US$)	Diamond exports (US$)
1994	0.22	0.0016	n/a	0.435	n/a	n/a
1995	3.09	0.0015	n/a	1.824	0	n/a
1996	5.07	0.0030	n/a	–	0	n/a
1997	6.82	0.0064	2.57	–	$13,000	$198,302
1998	5.03	0.0082	18.57	–	$580,000	$1,440,000
1999	11.45	0.0047	69.5	–	$782,000	$1,813,500
2000	10.83	0.0044	n/a	–	n/a	$1,263,385

Sources: Coltan and gold figures derived from Ugandan Ministry of Energy and Mineral Development; niobium figures based on World Trade Organisation (WTO) aggregated data; diamond figures from the Diamond High Council. (All figures originally appeared in the UN Panel of Inquiry Report, 2001. All 2000 figures are to October.)

maintaining 25,000 troops in Congo. Rwanda keeps a further 20,000 troops on its own territory. The official annual Rwandan defence budget is just $63m: the deficit is likely to be covered through official receipts from mining exports (predominantly diamonds and coltan). Individual Rwandans, in both military and political circles, have also gained substantially from mineral exploitation.

Rwanda controls most of the three Kivu provinces. These are rich in cassiterite (tin oxide), gold and coltan. Rwanda has no diamond production of its own. Once again, figures supplied to the UN Panel of Inquiry show accelerated exports since the war broke out.

Table 2: Rwandan mineral production (1995–2000)

Year	Gold production (kg)	Cassiterite production (tons)	Coltan production(tons)	Diamond exports (US$)
1995	1	247	54	n/a
1996	1	330	97	n/a
1997	10	327	224	$720,425
1998	17	330	224	$16,606
1999	10	309	122	$439,347
2000	10	437	83	$1,788,036

Sources: Coltan, cassiterite and gold figures derived from Rwandan Official Statistics (No. 227/01/10/MIN); diamond figures from the Diamond High Council. (All figures originally appeared in the UN Panel of Inquiry Report, 2001. All 2000 figures are to October.)

3. The coltan economy: from boom to bust

Cassiterite has been mined in the Kivus since colonial times. Tantalum and niobium were known to be mixed with the tin, but until the 1990s had not been exploited. Rising global demand in the 1990s provided incentives to begin exploiting tantalum separately, and new technologies meant that separating coltan from cassiterite became profitable.[3] Tantalum production in the Kivus began with the first year of war in 1996, and accelerated with the second conflict. Production would almost certainly have begun, even without the war, given global market conditions. However, as a consequence of these wars vast possibilities for profiteering have opened up, and most barriers to entry have been removed.

3.1 Fluctuating global conditions

West Australian company Sons of Gwalia is the world's biggest tantalum producer, with 25% of the global market. In a 2001, the company notes that 'unlike many of the more common metals … tantalum is not traded in a central market; it is consequently very difficult to determine the tantalum price'.[4] It goes on to state that 'African supply from a number of countries including the Democratic Republic of Congo, Mozambique, Zimbabwe, Rwanda and Ethiopia is from a large number of very small operations'. The nature of this fractured market – it does not note – opens it up to manipulation and distortion.

As Figure 1 shows, demand for tantalum more than doubled in the seven years from 1993.

Average prices did not increase so dramatically up to 1999, suggesting that rapid growth in output roughly kept pace with demand (see Table 3, overleaf). However, global consumption surged dramatically in 2000, to approximately 5,000,000lb – a 38% increase. Now supply could not keep pace, leading to a deficit of at least 500,000lb.[5] This resulted in raw tantalum spot prices of as much as $300/lb by the year's end. The following figures, from three separate sources, illustrate the global origins of what, local to the Kivus, became 'coltan fever' and the subsequent 'crash' a year later.

A number of factors engendered the precipitous return to the 1999 position. First, while major producers – particularly Sons of Gwalia – did not exactly 'flood' the market, they did rapidly increase production to meet demand. Sons of Gwalia works on fixed contracts with two major tantalum processors, Cabot and Stark; new forward contracts negotiated in 2001 permitted increased production confident that there would be a market for it. Second, the overheated price in 2000 was based on inflated demand projections over the short to medium term. These were revised downwards with the global economic downturn at the start of 2001, further accelerated by 11 September. One commodity price expert suggested similar demand overestimation fuelled an almost identical price speculation in 1979–80, before the market corrected.[6]

Figure 1: Tantalum concentrate demand, 1993–2000

Table 3: Global coltan prices (US$ per pound), 1995–99

Year	1995	1996	1997	1998	1999
Average price	26.98	27.75	28.76	33.80	34.00

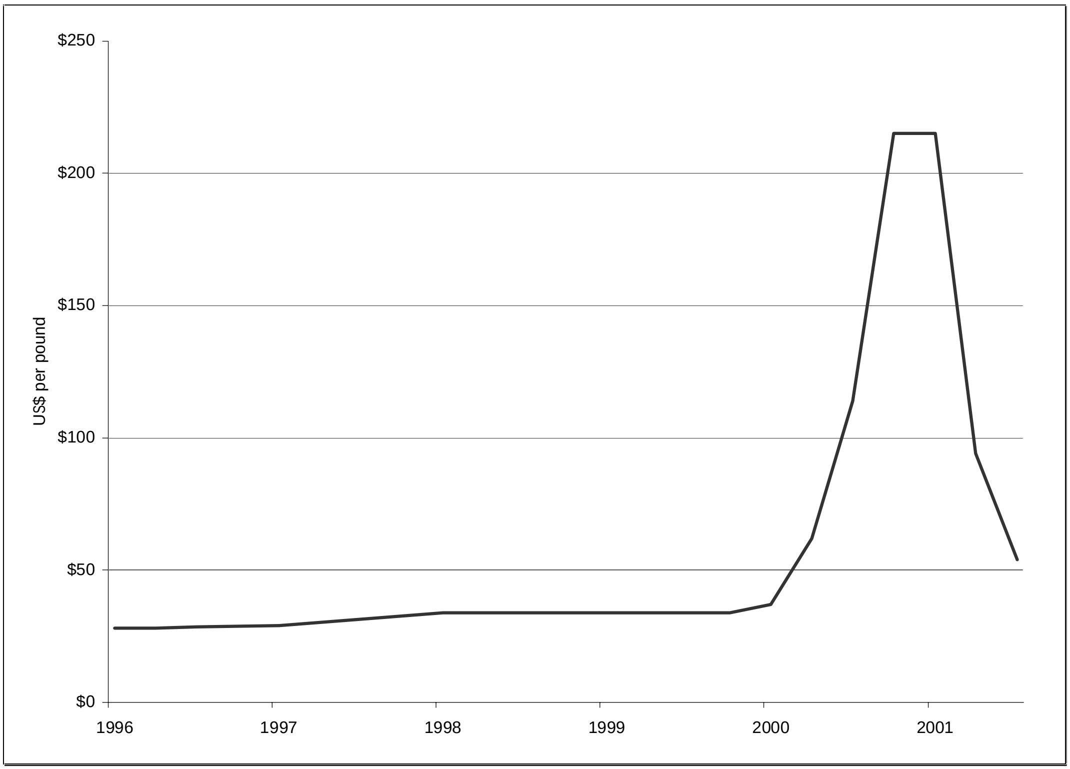
Source: US Geological Survey (USGS), Mineral Commodity Summaries, February 2000.

Table 4: Global coltan prices (US$ per pound), 2000 and 2001

	2000				**2001**		
Price/source	**1st Qr**	**2nd Qr**	**3rd Qr**	**4th Qr**	**1st Qr**	**2nd Qr**	**3rd Qr**
Metal Bulletin	$28–32	$49–50	$95–130	$180–240	$180–240	$75–95	$30–40
Ryan's Notes	$45–48	$65–85	$95–135	$250–300	$250–300	$70–80	$38–45
Platt's Metals Week	$33–35	$55–65	$145–175	$145–175	$100–45	$75–95	

Note: Differences in price are explained, in part, by differences in the purity of ore being sought in these separate markets.

Figure 2: Tantalum: world price movements, 1996–2001



3.2 The coltan commodity chain

3.2.1 Mining

The coltan commodity chain begins in the Kivus' hills and forests, where it is mined artisanally. Work is in small teams: after digging a few metres, one person bails water from the hole, one person digs up from the hole onto a pile by the sluice (a flat, clay-lined pit with walls made of slates on three sides), one refills the sluice periodically with materials from the pile, and one sluices, continuously turning and scraping the materials with a spade. The dirt runs away in the water; turning it brings the bigger stones to the top to be skimmed. The heavy ore, in tiny pebbles, sinks to the bottom. Working in this way, a team of four can produce two kilos of ore a day. When separated, coltan is a grey rock unremarkable other than for its extreme heaviness (its high density is one of its valuable qualities).

Coltan ore is exploited in a number of territories of the three Kivu provinces: Masisi and Walikale (North Kivu) and Kalehe (South Kivu) are the principal focus of this case study. Masisi, north-west of Goma, North Kivu's capital, is a verdant upland similar to neighbouring Rwanda in topography. Until the late 1990s, the landscape was dominated by enormous cattle ranches mostly farmed by a small elite. The destruction of these ranches between 1993 and 1998 opened land to exploitation at just the moment when coltan was turning profitable, and local people were in desperate need of livelihoods other than agriculture. Kalehe, to the south of Goma, is administratively in South Kivu province, but its history and geography are similar to Masisi, and it is often conflated with it.

Walikale is geographically, geologically and socio-historically distinct. Although administratively in the western extreme of the Kivus, geographically it is at the verge of the great equatorial rainforest covering central Congo. Between Masisi/Kalehe and Walikale lie mountain ranges, the tail end of the East African Rift Valley and the watershed dividing the sources of the Nile and the Congo. This is also something of a socio-historical division, the meeting point of 'forest culture' and 'lake culture' peoples, though precolonial migrations muddied these anthropological divisions. Walikale's climate is sweltering rain forest. In Masisi/Kalehe, coltan is found mainly on open verdant hillsides; in Walikale, deposits are deep inside the forest.

Differences in 'traditional' land tenure (much modified by colonial rule) between Masisi/Kalehe and Walikale accounted at the beginning of the boom for differences in organisation and in the scale of production: on the whole, Walikale was more artisanal and individual. Subsequently, differences have emerged in the degree and nature of military domination of production between the two areas. Walikale's remote terrain is more easily contested by fragmented militias operating as economic actors. In Masisi/Kalehe, much coltan is exploited on former ranch land. Some ranchers have accepted exploitation by other entrepreneurs for now; others are trying to make money themselves from coltan. Although from a multiplicity of ethnicities, these ranchers are popularly resented as 'Tutsi' or 'Rwandan'. This confusion is one source for the belief that coltan is Rwandan-controlled. Masisi and Kalehe are also comparatively much closer to Rwanda than is Walikale, and fairly well-served by roads and transport. These areas are, however, quite vulnerable to militia attacks.

In Walikale, coltan is generally found in remote rain forest controlled by local chiefdoms with a comparatively horizontal social structure. Hence, coltan was initially open to anyone prepared to undertake the remote trek. Equally, in the forest, diggers (*creuseurs*) were at the mercy of intermediaries also considered 'Rwandan' (whether or not they actually were so), again increasing generalised resentment. Walikale is isolated – main routes leading to Bukavu (South Kivu's capital) and Goma are barely practicable and extremely insecure. Walikale was the birth place of the Mayi Mayi militias and the forests are highly insecure. The Mayi Mayi, along with their enemies, the RCD rebels/Rwandan army, profit in organised fashion from coltan.

In both locations, then, 'there is a system of control now and it is not everybody that can get involved whereas before there was a *laissez-aller*, everybody could get involved'.[7] However, even at the beginning entry was not perceived as entirely free and there were signs of mounting communal tensions because of coltan:

At the moment [coltan] is a high-risk job especially if you are not a Hutu or a Tutsi. Our young Hunde miners are shot at point-blank range. In the mines, when people talk of armed groups they are mainly Interahamwe who systematically kill the Hunde but leave out the Hutu after they have robbed them. The young Hunde who manage to escape from the Interahamwe are then victims of the Tutsi army on the road. (Interview by the POLE Institute, December 2000: Pole, 2002).

One young miner described his entry into mining in the following way:

I started in the business because my Uncle had a field which showed some promise. I employed three diggers to work for me, all from the Matanda area … To begin with the business went really well, we dug perhaps 10kg a week. It was on the basis of exchange ['troc'], with five kilos to the diggers, five to me. I never did any digging myself. With the 5kg I sold, I would pay my children's school fees in Matanda … The coltan would be sold to purchasing companies. These would even come as far as the mines themselves. Lots of different people would come representing those companies, coming from Matanda, Karuba, Goma itself. At that time, the price we would get would be about $8 Kg, but now it has fallen to $4 or $5.

From initial artisanal exploitation, with small teams digging close to the surface, mines typically develop to more formal exploitation of seams that go horizontally along the surface, or penetrate down some ten metres. Numbi mine near Minova, South Kivu, is one example. As one digger describes it: 'There is a very big mine there, with many diggers. They are from Bukavu, from South Kivu all over. You can't count the number.'

Over the last four years, direct military/militia involvement at the lower ends of the commodity chain has increased, as the global price crash has forced out independent operators.

Many military elements – both Congolese and foreign – operate their own concessions, or do so in the name of their armed group. In other areas, the military offers protection for mining in return for a percentage of the ore. Increasingly, labour-intensive mines are worked by diggers under the direct control of Rwandan or RCD officials or the military. In some cases labour is paid; in others, it is coerced. Child labour has been reported, as has the press-ganging of local villagers (UN Panel of Inquiry, 2002) and the use of prison labour from Rwanda (ASADHO, 2000; Société Civile, 2001).

Military actors have increasingly employed force to acquire and control mines. In the analysis of the UN Panel, 'direct confrontation among the principal adversaries that are parties to the Lusaka Ceasefire Agreement has all but disappeared' (2002: para 35), replaced by localised combat to control resources. Population displacement from mineral-rich areas is frequently engineered – particularly in Ituri, north of the Kivus, where fighting has concentrated around gold deposits, but also in Kivutien areas such as Karuzi-Biyega forest.[8] In South Kivu, villages around Kalonge and Bunyakiri were completely emptied in 1999 and 2000 to enable coltan production. After fighting in 2001 between RCD and Mayi Mayi/Interahamwe militias, ethnic Nyanga and Hunde from near Pinga, Walikale, were displaced towards Kichanga, where they were sheltered in Hunde households, adding to the already heavy livelihood burden. In May 2002, the Kaka Sawa Mayi Mayi faction (the 'Pure Brothers') seized control of Kampene, Maniema province, deep in the forest 500km south-west of Bukavu, an area rich in gold and coltan. In June, an RCD attempt to regain the town displaced the entire population into the forest (MISNA, 8 June 2002).

Violence has also been used to loot minerals already mined. Large stockpiles were seized during the RCD takeover of the eastern DRC in 1998. Losses of the Société minière et industrielle du Kivu (SOMINKI) in South Kivu are estimated at $42.5m (SOS Grands Lacs, 2002). Significant amounts of ore continue to be looted in militia/military attacks. Interahamwe militias in Katoyi forest, for example, frequently make sorties against the coltan-producing Kibabi area. This looting demonstrates a rule of thumb: that the more rebel groups splinter, the more they turn from political to economic objectives. In the eastern DRC, self-styled 'national resistance forces' possessing no strong unifying logic operate as independent raiding parties. Some young men are said to join the militias purely because 'they are the ones who have access to the parts of the forest where the mines are for coltan, gold etc'. On 29 April 2001, more than 100 people were reportedly killed at Kakelo, Bakano *collectivité*, Walikale, when Commandant Manyoanyoa's Mayi Mayi raided to seize coltan and were repulsed by other Mayi Mayi holding the area. In many rural areas, rumours of militia attacks are enough to empty an area for looting. Rwandan army/RCD forces are also alleged to attack in this fashion for 'harvesting'.

There is evidence of collusion between apparent military enemies. Some mines have grown so huge that RCD officials frankly admit 'you will find maybe two or three thousand people mining and you can't tell who is who – Interahamwe, everybody. When it reaches Bukavu or Goma you really can't tell if it has been mined by Negative Forces [militias] or whoever!'[9] Despite anti-Rwandan rhetoric, many Mayi Mayi sell to the same coltan dealers as Rwandan army and RCD entrepreneurs; these, in turn, will sell to *comptoirs* controlled by Rwandan interests.

3.2.2 Intermediaries and syndicates

Mining sites are remote, and there will frequently be two or more layers of intermediaries before the ore reaches a major town such as Goma or Bukavu. The first will be a local person of means who journeys to the site and perhaps swaps supplies – manioc flour, dried fish, beer – for ore, though they may also pay cash (US dollars or Congolese francs). This intermediary then brings the ore to a major local market, such as Walikale Centre or Matanda, before selling to a second-level intermediary. These, the so-called 'Papas Coltan', arrive with dollars, buying in quantity with a reasonable knowledge of the percentage of tantalum the ore contains. The exact percentage is assayed with spectrography machines, but previous purity establishes trust beforehand. The second intermediary then arranges transport to Goma, Bukavu, or direct to Rwanda. Frequently this must be by air, though some productive parts of the Masisi are accessible by pick-up truck.

In the major towns mineral-purchasing syndicates, or *comptoirs*, buy ore from second-level intermediaries. Workers crush, wash, grade, separate, extract and assay it. Packed into barrels, it is then air-freighted to Europe. Trading companies shepherd the product until it reaches international cargo and expediting companies, which forward it to processing plants in Europe, Asia or North America. The ore is refined into tantalum sheet, powder or alloy before sale to electronics component manufacturers, satellite and armament manufacturers and other end-users. The US government maintains a strategic stockpile of tantalum last drawn down at the end of the 1980s. It is not known whether that stockpile comprises only US tantalum, or whether Congolese tantalum finds its way there.

In terms of the distinction between producer-driven and buyer-driven commodity chains, coltan is clearly buyer-driven (Raikes et al., 2000: 9). Producer-driven commodity chains generally have high, capital-intensive barriers to entry; buyer-driven chains subordinate producers to key agents controlling activities such as marketing. At the level of primary intermediaries, there is still freedom of entry for non-military individuals, though reports suggest that some military officers – Congolese and Rwandan – moonlight as coltan buyers and sellers. At the level of secondary intermediaries and syndicates, however, military predominance has become consolidated over the years of boom and bust:

There has been a real crunch where the diggers now come into contact directly with military buyers. The buyer organises the diggers, he takes them to a particular part of the forest, he pays their taxes for them, takes their coltan, gives them some kind of receipt, takes the stuff saying 'I will test it in Bukavu and let you know'. Then he comes back and just dictates to them 'You had 10% purity, you had 15% etc' … Now it is really the buyer who has all the *advantage because he knows very precisely the quality but the seller has no idea.*[10]

Threat of force has allowed military entrepreneurs to deny crucial facts to those doing the mining (a situation known to economics as 'assymetric information'). But this is only one way in which the coincidence of violence and the global squeeze have altered the structure of the coltan commodity chain. Together, these two forces have driven out a stratum of independent intermediaries who flourished during the brief boom, replacing them with militarily-connected actors able to capitalise on vertical integration and tight control. 'Violette', for instance, is a former intermediary: a Congolese *rwandophone*, in 2000 she regularly flew to Walikale from Bukavu with a large financial stake assembled from friends, neighbours and investors, buying in Walikale market at about \$25 a kilo, paying \$1.50 per kilo air transport and some further kickbacks, before trying to sell in Bukavu at about \$30 to the commercial *comptoirs*.[11] Many independent intermediaries at this level were ethnic Bashi, a 'trader people' considered culturally and linguistically 'almost Rwandans' as far as Walikale people were concerned, and resented for their control of intermediary trade. According to one NGO worker, 'the Rwandan businessmen are imposing the price, they want to control the market … The principal comptoirs there make money for Rwanda, they are Rwandan'. 'Violette' was driven out of business in 2001:

Even the comptoir *my neighbour ran has closed … I lost \$13,000. The price collapsed when the Australians pushed out product. The business continues, but it is only the Rwandan government that buys. Even the diggers are giving up because they can't make a profit at the price that is being imposed. We used to pay \$1,200 for the licence to operate as intermediaries and now it is just \$100 or so and it is still not worth it. The* comptoir *licence was \$40,000 now it's \$15,000 … A few years ago, everybody here in the town had money because of coltan. You know, to have \$100 was nothing – you would just spend that in half an hour, 'blow' it. Now there is nothing.*

Secondary intermediary activity has become oligopsonistic, with a restricted number of sellers. Fewer *comptoirs* trade in coltan than during the boom; those that do have connections to Congolese or Rwandan politico-military elites, making it easy to circumvent RCD 'customs arrangements' in the Kivus. A taxi driver interviewed in Bukavu in April 2002 recounted how he made several trips as a primary intermediary around October 2001 to mines near Kamituga, Maniema Province, swapping dried fish for raw ore:

Once I bought my 55kg of coltan, I took the plane back. By then, the flight had gone down in price. \$50 for me and \$1 per kilo. I paid by borrowing the money from X [a well-known Rwandan businessman] in the purchasing house against the coltan I had. He gave me \$1,050 in total for the coltan, about \$19 the kilo. I sold it all to X. And he was the one, his comptoir, *was the one who arranged things with the customs when I arrived so I don't know. They would measure the quantity and so on. The coltan remains in the plane and the* comptoir *sends a truck for it to Kavumu [Bukavu airport]. X sends it from there to Kigali and then to South Africa. He doesn't have to deal with the customs, it just passes. Denis is a Rwandan … I don't know how he does it!*

Briefly, at the tail-end of the boom, the RCD/Rwandan authorities centralised all coltan purchasing under a monopsony (a monopoly buying organisation) called the Societé des Mines des Grands Lacs (SOMIGL). Two of the four partners were the RCD-Goma itself and the controversial Mme. Aziza Gulamali, a Bukavu businesswoman whose concerns include management of the Sportsman cigarette factory and *comptoirs* in Goma and Bukavu. In 2000, Gulamali was a major backer of the Hutu rebel group Forces for the Defence of Democracy (FDD) in Burundi. (That she could be selected by the Tutsi-aligned RCD to manage a lucrative coltan monopsony added weight to the view that Rwanda's calculus in eastern Congo was now mercenary, rather than political.) The monopsony was peremptorily abandoned in April 2001 after Gulamali failed to keep up the \$1m a month in licence payments to the RCD. Sources suggest that independent *comptoirs* simply went underground during this period, smuggling their coltan to the international market and undermining the monopsony. Ultimately, however, SOMIGL was one of many casualties of the global price crash.

Some dealers claim that, after the crash, coltan from DRC has become prohibitively expensive; as one put it, 'The Congolese are like … How shall I say … They are a bit hard. They fight on the price, they need a big price which I can't pay … So I am dealing with guys that have concessions [in Burundi]'. There are not known to be deposits of tantalum in Rwanda or Uganda; concessions in Burundi are unconfirmed and their existence is contradicted by other sources. If tantalum is being exploited in Burundi, this will link the war economics of the regional conflict in the DRC to Burundi's own FDD guerrilla insurgency (the concessions discussed are in Ndora, northern Burundi, near the Rwandan border, and in Muramvia, central Burundi, both of which are embroiled in Burundi's civil war). Alternatively, there may be no concessions in Burundi or Rwanda and the coltan exported from there remains Congolese, falsely described in order to distract international attention and avoid 'taxation' by the RCD. Although hard to quantify, informants assert that the 'majority' of coltan originating in the Kivus goes straight to Rwanda for processing and export.

3.2.3 Governance, licensing, taxation and profit

From the beginning, the RCD rebels, the Rwandan army and the administration have profited from formalised licensing fees, taxation and customs duties on coltan and other minerals. Establishing the exact level is difficult, however, given great variation over time in the official fees and, of course, the extent to which those fees are applied. All licence fees – from comptoirs to lowly creuseurs – have fallen since the crash. However, formal governance structures such as licensing arrangements for extraction or marketing in many instances distract from the underground and quasi-informal nature of business arrangements from individual to individual, between apparent enemies and across borders.

One estimate (Jackson, 2001) suggests a surplus of approximately \$17m a month in late 2000, based on an estimated 100MT of coltan a month exported over an 18-month period (UN Panel of Inquiry, 2001) at a prevailing world price of \$200/kg, with a reported average of \$30/kg being paid to intermediaries. Clearly, this margin must have fallen substantially. But exports have not fallen much, if at all:

RCD mining sources interviewed for this research suggested that, in 2001, 1,066MT of coltan was exported from South Kivu alone. Moreover, this figure was admitted to represent perhaps 60% of the true amount once 'uncontrolled trade' was factored in.

How these amounts split across individual senior figures within the RCD and Rwandan politico-military elite is unclear. Some researchers (Lumbi, 2000; ASADHO, 2000) name particular individuals said to have benefited enormously. It has not been the remit of this study to verify or refute these accusations. Conjecturally, however, the following argument can be advanced: prices have fallen, margins have been squeezed and licence fees have decreased. However, export quantities may have increased. Finally, politico-military presence at all levels of the chain has consolidated. Cumulatively, these facts suggest that, while official revenues to the RCD in taxation and fees have contracted since the global fall in price, private profits – in many cases to the same actors but in a private capacity – have held steady or even increased.

3.2.4 Export connections

Comprehensive research by the International Peace Information Service (IPIS, 2002) demonstrates how European companies have aided and abetted the domination of military actors in the purchasing and export of coltan to international markets. First, it documents the relationship between certain Belgian companies and the rebel monopsony SOMIGL, estimated to have generated $600,000 in revenue for the RCD in December 2000 alone; between SOMIGL and a company with a fictitious address in Belgium; and between a Belgian subsidiary of a transnational firm which was a partner of the *comptoir* MDM before losing out to SOMIGL.

Second, a German corporation was involved in three separate coltan deals amounting to the export of 75MT from June to September 2001. Taking $40 as the approximate world price prevailing at this point, and depending on the purity, this amounts to some $3m-worth of ore. IPIS suggests that the volume of the export implies that the ore originated in old stocks from SOMIGL after its collapse.

Third, the IPIS research documents a sequence of joint ventures between European trading concerns and the upper echelons of the Rwandan army and Rwandan political circles. Offshore companies belonging to a Swiss businessman buy from Rwanda Metals, a commercial front for the army, selling it on to a processing plant in Kazakstan. Meanwhile, a Dutch/American joint venture has as its Kigali representative Rwandan President Kagame's brother-in-law. While the firm denies trading with Grands Lacs Metals, another army-controlled operation, it would not specify from where it *does* purchase.

4. The war economy and livelihoods

War is conventionally seen as only destructive. A significant innovation of the political economy approach is to demonstrate that war is in fact a *transformative* economic process. This is not to deny war's calamitous impacts – indeed it underlines them. It emphasises, however, that war causes individuals to modify their economic behaviour in order either to capitalise on the opportunities offered (profiteers, entrepreneurs of violence) or to minimise the risks posed (peasants' coping strategies). Livelihood transformations under war in the DRC fall into both categories: new rent-seeking opportunities identified by elites; and the mutation of grassroots modes of livelihood.

While the literature on the 'second economy' in Zaire is rich (MacGaffey, 1986, 1988, 1991, 2000; Vwakyanakazi, 1991; De Boeck, 1999), relatively little has been published about survival strategies since the advent of a 'war economy' in the late 1990s. Survival at the margins in Zaire always entailed fending for oneself. The Kivu border regions, mineral-rich and economically linked to East Africa and the Gulf states more than to Kinshasa, offered opportunities for quick enrichment for some. War has radically modified economic modes of life rather than introducing profoundly new ones.

It needs to be underlined again that the war's humanitarian impact has been vast. Since August 1998, more than two and a half million people have died (IRC, 2001). Of these, 350,000 were killed by acts of direct violence (IRC, 2001:15), with the remainder dying from the impact of economic collapse, displacement, loss of livelihood, malnutrition and communicable disease. One indicator of the scale of this crisis, shocking in its apparent ordinariness, is the advent of evening markets in the Kivus. Markets conventionally took place in the mornings in rural centres. However, despite increased insecurity, more and more are held in the early evening because people need the whole working day to generate any income at all.[12] Many people carry forward no margin of economic comfort *whatsoever* from day to day.

4.1 The state of assets

A recent framework for analysing livelihoods amidst war (ODI, 2002) identifies six sets of assets whose status are critical.

i) Financial assets. For ordinary people, financial assets are almost non-existent. Years of war have affected the provincial agricultural market, depressing both supply and effective demand, interrupting delivery, hyperinflating currency and severing economic linkages. This last is particularly important: a coherent picture of market behaviour for basic foodstuffs is almost impossible to achieve since these fluctuate from month to month and village to village as fields and routes open or close due to insecurity. While analysis confirms a remorseless upward trend in the prices of all commodities, there are also localised price falls; one NGO worker interviewed in July 2001, for example, reported:

Before, in 1997, a 100kg bag of beans cost $50 in the markets. Now it might sell for only about $10 – this is in the local markets in the Masisi, such as Kirotshe, Bweremana. But in the main Goma market there is a transport premium, so a bag might go for perhaps $25 or $30. Where the price is lower than normal this reflects failure of effective demand, not abundant supply.

Fortnightly data from the Food and Agriculture Organisation (FAO) indicates precipitous price increases over two years (through the coltan boom to the beginning of the bust)[13] in four significant markets: Goma, Sake (a major Masisi market), Rutshuru (capital of Rutshuru territory, bordering Masisi) and Butembo (a trading centre in northern North Kivu, controlled by the Ugandan-aligned splinter of the RCD, the RCD-ML, and thus somewhat distant economically from Goma). Three graphs based on this data are presented. The first tracks the price of a '*cossete*' (about 50kg) of manioc, in Congolese francs, presenting estimated price trends based on raw data provided by the FAO. The second repeats this analysis with prices adjusted to dollars at the local market rate (varying week on week in each location). Finally, a comparative graph of exchange rates in Goma and Sake is presented. The three graphs are given overleaf.

Both dollar and Congolese franc graphs are given since significant parts of the population are either functioning almost exclusively in dollars (military and political elites, commercial people, the higher links in the coltan commodity chain) or exclusively in local currency and barter (peasants, petty commercial actors, the lowest links of the coltan chain). All four markets have seen exponential increases in Congolese franc prices as a result of war-based hyperinflation – as much as 9,000% over a two-year period. Given this, it is almost impossible to imagine that anyone without access to dollars could be a purchaser, rather than a subsistence producer or barterer.

Examining the first graph, it is notable that hyperinflation in Rutshuru, while considerable, has been greatly lower than in the other markets. This may be because of comparatively better security there, the comparative lack of 'coltan fever' in Rutshuru and/or its proximity to the Rwandan border (enabling trans-border livelihoods, which may be more stable). This difference is even more apparent in the dollar analysis.

While times have been tough for Goma, they have been even tougher for those purchasing basic foodstuffs in Butembo, which is severed from the rest of North Kivu by the split between wings of the RCD, and in Sake, which is closest to the coltan areas. Price increases in Sake are partly due to a radical drop-off in local food production as people moved into mineral exploitation instead. One informant described this as 'le syndrome Kasaien, le syndrome Kilomoto: everything that is consumed comes from elsewhere, even though the soil is very fertile'. This is a reference to the long-term impact of intensive mineral exploitation in the Casai area and around Kilomoto gold mine.

Dollar price trends perhaps more accurately reflect the reality for purchasers. While urban areas have been dollarised for some time, coltan has dollarised many relatively remote rural areas:

Figure 3: Manioc price trends (Congolese francs), 1999–2001

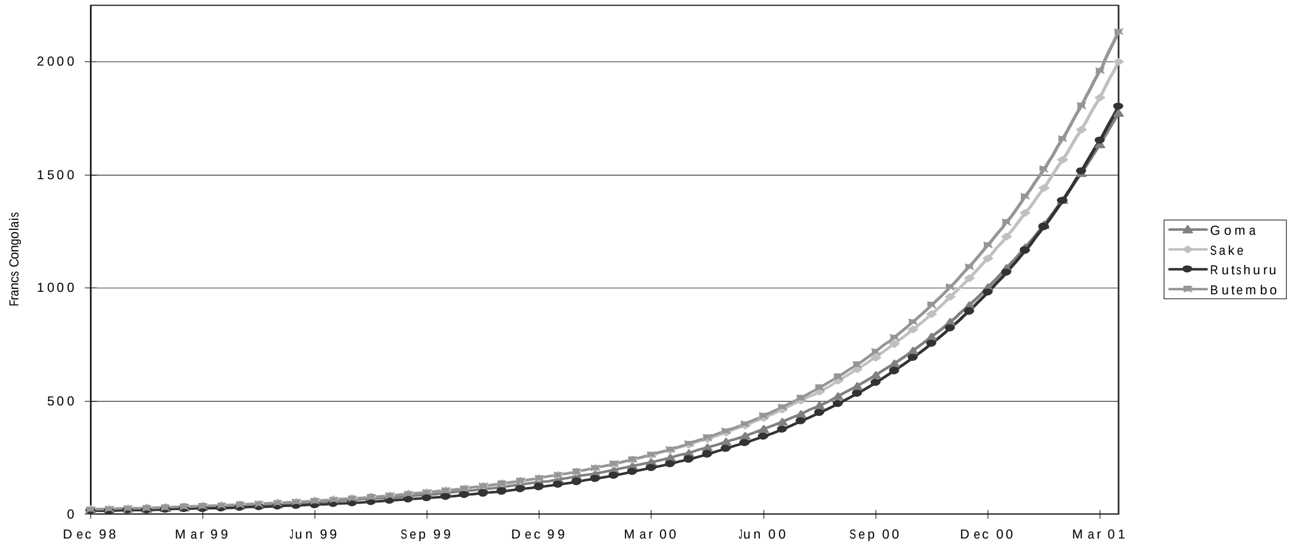


Figure 4: Manioc price trends (US dollars), 1999–2001

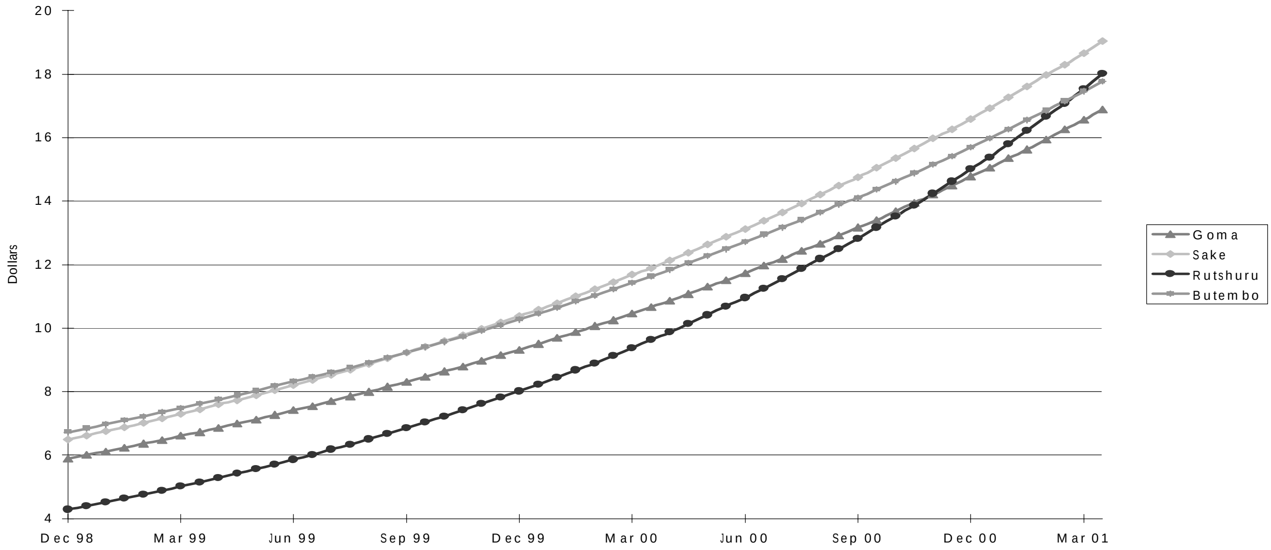
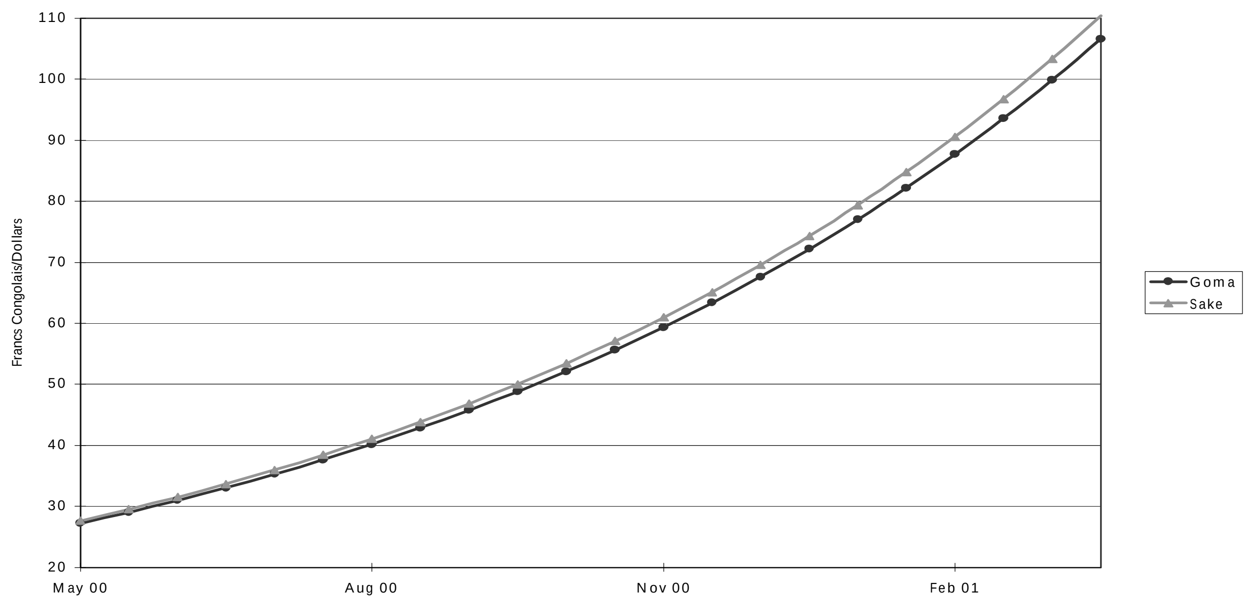


Figure 5: Exchange rate trends



It's been dollarisation completely [up around the coltan areas] – and without reference to the market. 300 CF per dollar, a beer sold for $3 etc. When you have dollarisation there is always a rise in prices. And there is a gravitation of all kinds of other activities towards the mines.[14]

Since these dollar prices are calculated on the basis of local market exchange rates, they reflect not just inflation in prices but also loss of dollar purchasing power as dollarisation accelerates. Even in dollars, over the same two-year period price increases have been enormous, ranging from 300–400% for manioc. Again, Rutshuru is relatively better insulated. While all three other markets experienced pronounced increases, around August/September 2000 Sake (a rural market) overtook Goma (an urban one). Since Goma's agricultural markets are normally supplied from Sake (to the north-west, in the Masisi) and Kalehe (south), this is shocking: rationally, consumers in Goma should pay higher prices because of transport and other overheads. But September 2000 was the high-water mark for 'coltan fever', when the world price hit an all-time high. The graph of exchange rates in Goma and Sake shows that, in the same period, dollars in Sake were buying more Congolese francs than in Goma, presumably because there was a high demand for dollars in Sake for payments and salaries within the coltan trade. This effect offset the increase in the manioc price in Congolese franc terms. Had this not been the case, the dollar price of manioc would have increased still more radically.

The following conclusions can be drawn about financial assets and livelihoods during the period of coltan fever in Sake, Masisi:

- Demand for dollars grew considerably compared with Goma.
- Supply of manioc (and other staples which broadly follow the same trends) decreased, thus inflating the price in dollar and franc terms.
- Hyperinflation affected franc prices across the board in North Kivu, but particularly strongly in coltan areas.

What of the financial assets of more successful players in the war economy? The coltan boom brought considerable quantities of dollars into the urban economies of Goma and Bukavu, fuelling particularly a building craze.[15]

Almost all industries in the Kivus – exceptions are the brewery, tobacco and, of course, mineral *comptoirs* – are now looted and abandoned. Cattle-ranching, once hugely intensive, with several hundred thousand head grazing on immaculate pastures in the Masisi, has been wiped out. During a day-long field trip into the Masisi from Goma, this researcher counted just one cow and one goat. As for the formal mining sector, premises and stocks were looted at the start of the 1996–97 war.

ii) Human assets. The war has, overall, decreased labour value. Coltan revalued certain kinds of labour. In the boom years, even ordinary diggers were able to make significant sums of money. With the price collapse, wages have fallen to such an extent that many now see coltan digging as 'seasonal', attractive only when agriculture is off. For the middle classes, tertiary education and foreign-language proficiency offer access to employment in the aid economy. Aid is still at historic lows; most bilateral cooperation was severed as early as 1991, and what aid does still flow trickles down to a throng of local NGOs and associations.

iii) Natural assets. Aside from minerals, the principal asset is land. The Kivus are amongst the most fertile and densely populated parts of Africa. Land tensions were one of the triggers for the 1993 war, and they remain explosive. While the destruction of the cattle ranches opened up land to temporary exploitation by displaced people, access remains precarious. The militias are mobile and unpredictable, which means that many work only small plots close to their homes, not larger ones further into the hills. This, in turn, means subsistence levels of production rather than traditional surplus, contributing to agricultural price inflation.

iv) Physical assets. Although markets continue to function, the Kivus are increasingly segmented into discontinuous economies as a result of deterioration in the road system and the presence of threats along it.[16] The system itself profoundly degraded under the atrophying Zairean state. Many major routes are impassable during the rains. Additionally, the principal routes are logical targets for militias, with commercial actors frequently looted from and/or killed. While goods still make it through to urban markets by lorry, pick-up truck or boat on Lake Kivu, the volume is considerably lessened.

In March 2001, German Agro Action (AAA), the principal international NGO concerned with road repair, commissioned an independent study of the socio-economic impact of its work on the road between Sake, Mweso and Kanyabayonga (Endanda, 2001). Amongst the many beneficial indicators of impact, the study noted that food prices in local markets dropped by between 30% and 50%, bringing them back down towards prevailing prices in Goma.

v) Social assets. The predominant social assets are networks of kinship and identity, enabling claims upon people in positions of relative power and responsibility. People displaced by violence are often offered protection by relatives, adding to the economic burden. Religious networks, often closely overlapping with ethnic affiliations, offer access to resources and support. Ethnic identity permits or excludes land claims on customary authority. Finally, professional networks – originating in the small number of tertiary institutions in eastern Congo – determine job opportunities within the local NGOs almost as much as do ethnic considerations.

vi) Political assets. For rural people, connection to structures of customary power remains a key political asset. However, many young people in rural areas have entered militia movements. An economic decision as much as one of political protest or 'national resistance', this also for some represents resentment towards customary authority (Van Acker and Vlassenroot, 2001). A connection to RCD cadres or the military clearly operates as a political asset, as do links to occupants of positions of administrative responsibility, such as customs or tax officials.

Two final political assets are the ability to deploy violence and the ability to spread rumour. Violence remains the principal form of political discourse in the Kivus: those who direct it, from the local to the regional, dictate terms for everyone else, hence the bewildering proliferation of movements capitalising on either the 'Mayi Mayi' or the 'RCD' brand-names. Circuits for the dissemination of rumour and disinformation – underground publishing and distribution of tracts, but also semi-formalised *samizdats* in print and on the internet – are also an asset of political power.

4.2 Rural livelihoods in the Kivus

In many rural areas, increased insecurity has reduced agricultural production to subsistence levels. During the 1993 war, urban centres were the usual targets and populations tended to flee into the 'bush' for safety. Nowadays, rural communities have been targeted more, triggering migration into towns ill-equipped to cope. Major Kivutien towns have seen their populations swell, as have smaller and more remote centres like Nyabiondo and Sake. For people displaced to urban areas, livelihoods are much more constrained than in rural areas, where host populations traditionally make productive land available to new arrivals. For some Congolese *rwandophones*, labour migration to Rwanda has been an option, but one chosen reluctantly.[17]

Enlisting in proliferating militia bands has become a rural livelihood strategy. Young people initially attracted into coltan by the possibility of dollars and then forced out by the crash swell militia ranks or 'borrow' their cover. One local NGO worker interviewed reported:

If there are diggers who now have no activity, they probably go stealing the cows or the goats of others. I think that they have transformed themselves into thieves and so on … And they take the name Mayi Mayi to cover themselves. They are a long way from home – I've seen people who walked from Bukavu to Shabunda (300 or 400km). You don't even need a gun, you can use a machete or a spear, although it is also easy to get arms … You can even use the rumour that 'the Mayi Mayi are coming'. People flee and then you steal. Some of them are natives back there [where they operate], some are displaced there but marry, stay.

At the local level, 'militias' blur into 'bands'. While continuous propaganda asserts a central command structure for the Mayi Mayi, for example, at local level this is far from evident. To a large extent, the same is true of the Interahamwe, Mongoles, Lingilima and others. The ordinary population attribute meaning to attacks against them by naming particular militias as responsible. But much of the violence exhibits the raiding tactics of tiny, armed criminal groups, rather than the strategic thinking of an organised movement.

Desperate Congolese resourcefulness, making a margin on the smallest trades, continues to offer survival livelihoods. Women in rural areas, in particular, manufacture a microeconomy out of repackaging and reselling products of all kinds – charcoal, flour, vegetables. The margin made in breaking and reselling a couple of kilos of flour into cupfuls may be as little as FC20. The size of units being sold in the marketplace – a biro cap of salt, a paper twist of flour – is indicative of the scale of economic collapse.

The borders with Rwanda and Uganda continue to provide opportunities for trade- and/or smuggling-based livelihoods for people at a variety of economic levels. However, the traditional direction of agricultural commerce – from the Kivus to neighbouring Rwanda – has largely reversed as a result of war.

'Coltan fever' has had more specific impacts on rural livelihoods. According to a local NGO director:

We have already seen the beginning of a bad impact of coltan on agricultural production. Kibabi, Ufamando and Katoyi: almost all of the young, from the age of ten up, are involved in this, and they would normally be the labour force for agricultural production. There has been a rural exodus: the youth who are making money out of selling coltan all want to install themselves here in Goma and other urban centres.

The degree of this impact is hard to quantify. Land left behind might be abandoned altogether, but is more likely to have been looked after by women, children or the elderly. Agriculture has not ceased, but combined with insecurity, the exodus of young people accounts for the drop in production. According to a Congolese UN officer in Goma:

When we talk about a transformation from agriculture to mining is that directly to do with the war? Or is it do with insecurity? Is it not the case that coltan is where there is more security economically? I think in general the problem is more economic than insecurity. Is that not why people are doing coltan? During war he [a peasant] is not at all sure that he will harvest [so coltan can seem attractive]. Particularly the intermediaries make so much out of it, buying at $1 the kilo and then selling for $25.[18]

In the Masisi and Kalehe zones, coltan is being exploited in areas that were previously highly productive agriculturally. Kibabi, an area previously famous for its beans which were exported to Goma town, is now a major coltan centre; purportedly, beans (a major local staple) now travel *from* Goma's markets to Kibabi for consumption by coltan miners and others.

During the boom, dependent commerce quickly emerged around coltan mines: sale of food and drink, gambling, brewing and prostitution:

There have been deaths in the mines as a result of inexperience. Mines collapse and so on. The kids leaving school, for the first time touching ten or 12 dollars, they drink, take drugs, prostitution is a real danger for them – and of course sexual diseases are a real problem. Leaders are saying that these kids will become irredeemable. They don't see the need for education, they just dream of getting a big rock [of coltan] which will buy them a car, entry into the business of ranching etc. They criticise their parents: 'OK, I wanted to study, but my parents couldn't pay, so I was chased from school and I decided that I should just rely on myself. None of the business people in this region have studied, why should I?'[19]

Easy dollars during the boom fuelled a pattern of conspicuous expenditure and largesse which analysts have noted elsewhere as associated with Congolese notions of masculinity and status (De Boeck, 1999).

Once the coltan price collapsed, what became of the young people who had quit agriculture for the easy dollars of mining? The picture across North Kivu is varied and difficult to establish. First, while margins have fallen, some find they can still make a livelihood at the new price if they mine 'seasonally' on land close to their agricultural plots. Others have quit coltan altogether to return to their fields and resume agriculture full-time.

Those miners lucky enough to have held on to gains from coltan have joined the urban migration. 'They are working as money-changers, *kadafis* [street-sellers of petrol] and so on, those with a little money. There has never been so much building in Bukavu in all the independence years until this war period.'[20] Small numbers of former coltan miners, having developed a taste for dollars, are now trying their hands at mining other minerals: pyrochlore (colombium), niobium, cobalt, gold or diamonds, tourmaline. Those who amassed small capital from mining have graduated to small-scale intermediary activity. These other minerals are found in quantity towards places like Shabunda, already hotbeds of clashes between militias and the military.

4.3 Urban livelihoods in eastern DRC

It is difficult to be precise about present urban livelihoods in the Kivus. However, the following broad conclusions can be hazarded. First, effective unemployment is at enormous levels, due equally to the non-payment of administrative salaries since 1990, the suspension of most aid since 1991 and the end of the 'HCR economy'[21] in 1996.

As in rural areas, individual strategies for 'making do' proliferate, many built around buying in bulk and selling in small quantities. 'Dieudonné', for example, works as a taxi-motorbike driver in Goma. He is working to buy the motorbike from his cousin, who works at the mission hospital and receives a regular salary. Dieudonné has so far paid off just $450 of the agreed $2,000. He works every day, giving what he earns to his cousin, keeping less than 50 cents with which to eat. A ride within Goma costs about 30 cents, a luxury affordable only on a regular income. 'I pray every day that the good God will keep me healthy so that I can keep working and have my own bike. Then I can finally get married'.

On the side, Dieudonné sells milk. He collects empty mineral-water bottles from friends who work at the houses of aid staff; people also sell empty bottles in the street for about FC10. Dieudonné then crosses the border to Rwanda with a 20-litre jerrycan, and buys from farmers from the hills (buying in a shop would eliminate his margin). He crosses back, paying FC20 to the border officials, pours the milk into individual bottles, and sells them ('I gain a small nothing', he says). Filling the jerrican costs $10: over a day or two he can sell the repackaged milk for $14–15 (FC135 a litre) to people from his neighbourhood. Would it not be better just to do the milk and give up the taxi business? 'No, because you can't sell a very large quantity in one day. People don't have the money. It can take four days to sell 20 litres. You have to find someone with a fridge and they want FC100 for the use'.

Asked how he can survive on so little, Dieudonné laughs, saying he is comparatively 'middle-class … I ration myself to FC100 [less than a dollar in 2001]. I eat only at midday and the evening, at home or sometimes in a *nganda* [street restaurant]: FC70 buys you some beans and rice, or beans and bananas, meat and *foufou* is about FC100. I don't eat in *La Pelouse* [a well-known *nganda*]! I find cheaper places, but still clean'. A secretary in a local NGO described conditions in her *quartier* as 'catastrophic': 'There are people there who don't even have the means to eat even one meal a day. They don't even have a blanket to sleep under in the night. The mother of the family will have just two *pagnes* [thin cloths] to wrap herself in … When they sleep at night, she will give them to her children, and she and her husband sleep like that, with nothing'.

Some war-displaced people remain in informal camps on the outskirts of Goma; others are hosted by families in the town. Many families are trying to feed three to four times the normal number of mouths. Consumption has been drastically reduced, many families cutting intake to one meal a day. For the very poorest, this consists only of '*buyi*', a very thin gruel of sorghum, manioc or maize flour and sugar taken as a drink.

5. Conclusions

This discussion of coltan and livelihoods may leave some humanitarians agreeing with this aid worker in the Kivus: 'We don't have the time or the need for all that. For our sector, all that is relevant is to know whether people have water or not. We are in an emergency phase still – we can't really look at long-term things. These things you are talking about require a long-term perspective'. However, the evidence in this case study in fact underlines the need for humanitarian agencies to base their work on an understanding of the political economy of war in the Kivus.

5.1 Understanding the context

First, all agencies operating in contexts of crisis need to understand the nature of the conflict and/or political instability in question. Without this understanding, well-intentioned aid can, on occasion, worsen conflict rather than alleviating its effects (Anderson, 1999). Coltan extraction is an important point at which local, national and regional conflicts in the Great Lakes region come together and influence each other.

Second, coltan has profoundly altered local power relations. Traditional authority has given way to military might; elders have ceded power to young people emboldened and enriched by coltan; community discourse has become profoundly ethnicised. For all these reasons, basing aid actions on assumptions of 'community' has become risky.

Third, coltan dangerously fuses economic, political and socio-cultural interests: for example, Rwanda's domination of the trade has adversely influenced the position of Congolese *rwandophones*, increasing prejudice against them. In an increasingly popular (but problematic) shorthand, coltan is a case where 'greed' has reinforced 'grievance' (Berdal and Malone, 2000).

Aid may easily transmit unintentional signals on both the material/economic and the symbolic planes (Anderson, 1999). In the mid-1990s, the Kivus experienced a paradigm case of aid exacerbating conflict. Aid helped sustain refugee camps in which former *genocidaires* from Rwanda trained and from which they mounted cross-border killings (McCall, 1998). Aid agencies' reputations are still 'coloured' in the eyes of ordinary Congolese by what happened then. Less well known, but equally important, is development aid's long-term role in exacerbating grievances around the explosive issue of land in the Kivus. Between 1971 and 1993, international aid built up the cattle industry in the Masisi, which was controlled by elites who developed huge ranches through means varying from purchase to forced displacement. By 1991, 512 families, of whom 502 were reportedly *rwandophone* (most, but by no means all, Tutsi) controlled about 58% of the available land in the Masisi (Vlassenroot, 2000). Resentment against this economic domination was one of the causative factors for the 'inter-ethnic war' in the Masisi in 1993 which claimed between 10,000 and 20,000 lives and displaced several hundred thousand people (Zex Kongo, 1999).

A final dimension of aid's part in destabilising the Kivus is the freeze/thaw cycle of engagement and suspension. International aid began in the 1960s, was suspended in the mid-1970s, resumed in the 1980s and was suspended again in 1991. At the moment when aid was being suspended in Zaire, it arrived in massive quantities over the border in Rwanda. That humanitarian aid at this point targeted Rwandans in Zaire without benefiting Zaireans themselves has left a lingering resentment.

5.2 Promoting livelihoods

Given abject humanitarian conditions in DRC, supporting livelihoods cannot wait until some future 'peace' – even if the good faith of those currently negotiating Congo's future could be relied upon. Humanitarian agencies must go beyond the short-term 'band aid' to promote survival livelihoods for ordinary people. Unfortunately, this entails some form of accommodation with the war economy because many of the war economy's changes are irreversible. As a local coltan researcher put it: 'The bulk of those interviewed were aware of the drop in price, they said even at the lower price [coltan] is better than waiting for four months to get one sack of beans. They can't go back to what they did before because it really didn't pay'.[22] According to a local chief, 'We can't go back to the way things were before coltan, because before, we had cows and goats, but since the war there have been none'.

As a first principle, agencies have to better understand the different but intertwined economic interests, some concerned with great profit, others with simple survival, which collectively make up the war economy. Rather than damning it out of hand in their advocacy, agencies may be forced to engage with and even support those parts of the war economy that offer the few available grassroots survival strategies in the short to medium term. Since mining has become critical to many ordinary people's livelihoods, pressure on all warring parties in the Congo to improve the governance structure around it is likely to lead to better results than calls for a boycott.

Most international and local aid agencies in the Kivus see themselves as engaged in relief, and thus directly concerned by structural issues of war economics. But coltan teaches us that global economic shocks can be just as much 'disasters' in humanitarian terms as a failure of the rains or a new military offensive. While the London Metal Market might seem like the other side of the moon to humanitarians on the ground in the Kivus, its mood swings feel all too near to Kivutiens who rely on coltan. Humanitarians require 'early warning systems' and early response for these less-studied forms of 'disaster' too.

In fact, many agencies in the Kivus are already realising the need to attune their actions to the dynamics of crisis economies. These include the aforementioned AAA (working in road repair and agricultural restart), Save the Children UK (health and agriculture rehabilitation), Oxfam (water and sanitation) and WFP/FAO (agricultural restart). SCF conducted two studies in 1999 and 2000 employing the household food economy approach to assess the state of livelihoods and vulnerability. Both of these identified how war economy processes caused livelihoods to mutate. Oxfam UK's staff have worked with local NGOs to understand the war economy. Primarily, this provided grist for the global advocacy mill, but it has also started to feed back into programming decisions on the ground. At the time of the research, the World Food Programme (WFP) had not yet introduced its vulnerability mapping (VAM) approach in DRC, but intended to do so in the near future; this methodology indirectly factors in some political economy concerns. AAA's socio-economic evaluation specifically analyses how its road repair work reverses some of the adverse economic effects of the war through the severance of economic linkages and impeded access. All of these different techniques can usefully capitalise on insights gained from systematic political economy analysis.

5.3 Targeting

Two specific lessons about humanitarian targeting emerge from the study of the war economy in DRC. The first concerns the troubling issue of forced displacement connected with the evacuation of areas rich in mineral deposits. All agencies reported their disquiet at this practice, but some also questioned their own role: to what extent does providing aid to such displaced people condone and perpetuate their displacement, thus playing into the hands of the profiteers?

No analysis would, or should, suggest *not* providing necessary aid to displaced people. But it is pertinent to ask what *else* must be done, in addition to providing such aid, so as not to reward the deliberate engineering of displacement for political or economic purposes. This is certainly the case where the twin duties of humanitarianism – assistance and protection – come into tension. To remain silent about forced displacement is tantamount to condoning it. Where it is feared that speaking out may compromise either an agency's security or its continued access to suffering populations, then pressure on those responsible can still be brought to bear via other channels – such as the UN or human rights agencies. But this still leaves a reporting duty on the humanitarian agency. Additionally, programming attention needs to be given to making assistance as time-limited and portable as possible so as to encourage return when conditions allow.

A second lesson concerns programming in an environment where economic interests compound inter-communal jealousies – where 'greed' and 'grievance' are mutually reinforcing. Here, prudent programming must take into account the possible knock-on effects of targeting decisions. If a particular ethnic group already has a reputation as being economically dominant, addressing that group's humanitarian needs may affect its longer-term interests by increasing resentment towards it. Again, this is not an argument for not providing aid – but it does suggest the need to address humanitarian need within an understanding of the broader context in which aid is delivered. Options include the need for transparency and local accountability in targeting decisions, finding ways to balance benefits across communities.

5.4 War economics: new or old?

It might seem that all this analysis argues that there is something radically new to be observed in the Congolese war economy, something which alters forever the reality in which humanitarians must operate. Recent writing has tended to argue that there has been a profound change in the nature of war itself, from 'old' to 'new', or 'modern' to 'postmodern' (see Kaldor, 1999; Duffield, 1998). The history of the DRC, however, suggests otherwise. Political economy analysis reveals dynamic, longstanding contours and mechanisms of inclusion and exclusion, created and reinforced through violence. Predatory economic behaviour was characteristic of Mobutu's Zaire and King Leopold's Congo Free State. Individual and collective beneficiaries come and go; if anything has changed, it is merely the technologies and techniques of predation. The manner in which violence is now deployed for economic ends in the DRC is as technically impressive as it is morally repugnant. Humanitarian actors must make similar advances in their own analyses in order to keep up with the entrepreneurs of economic violence.

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References

Anderson, M. B. (1999) *Do No Harm: How Aid Can Support Peace or War*. Boulder, CO: Lynne Rienner.

ASADHO (Association Africaine de Défense des droits de l'Homme) (2000) 'République Démocratique du Congo: Une guerre prétexte au pillage des ressources et aux violations des droits de l'Homme'. Rapport Annuel, Kinshasa.

ASPD (2001) 'Rapport sur la Violation des DHO en Territoire de Walikale'. Goma: ASPD.

Berdal, M. and D. Malone (eds) (2000) *Greed and Grievance: Economic Agendas in Civil Wars*. New York: International Peace Academy.

Chabal, P. and J.-P. Daloz (1999) 'The Political Instrumentalization of Disorder', in Chabal and Daloz (eds) *Africa Works: Disorder as a Political Instrument*. London: James Currey.

De Boeck, F. (1996) 'Postcolonialism, Power and Identity: Local and Global Perspectives From Zaire', in R. Werbner and T. Ranger (eds) *Postcolonial Identities in Africa*. London: Zed Books.

De Boeck, F. (1999) 'Domesticating Diamonds and Dollars: Identity, Expenditure and Sharing in Southwestern Zaire (1984–1997)'. In *Globalization and Identity: Dialectics of Flow and Closure*, eds. Birgit Meyer, and Peter Geschiere. Oxford: Blackwells Publishers.

Duffield, M. (1998) *Aid Policy and Post-Modern Conflict: A Critical Review*, unpublished paper. Birmingham: University of Birmingham.

Endanda, S. K. (2001) *Evaluation Socio-Economique des Travaux de Réhabilitation de la Route Sake-Mweso-Kanyabayonga Réalisés par Agro Action Allemande*. Goma: Université Libre des Pays des Grands Lacs.

Fairhead, J. (1993) 'Paths of Authority: Roads, the State and the Market in Eastern Zaire', *European Journal of Development*, 4, pp. 17–34.

Farah, D. (30 December 2001) 'Digging Up Congo's Dirty Gems', *Washington Post*.

Grobler, J. (April 2001) 'Namibian Diamond Mining in Congo: Minister Objects to "Sensitive Country" Label', *Other Facets* (Partnership Africa Canada).

Global Witness (2002) *Branching Out: Zimbabwe's Resource Colonialism in Democratic Republic of Congo*. London: Global Witness.

Human Rights Watch (2002) *The War Within the War: Sexual Violence Against Women and Girls in Eastern Congo*. New York: Human Rights Watch.

International Commission of Inquiry (1998) 'Final Report of the International Commission of Inquiry about Illicit Arms Transfers in the Great Lakes Region'. Submitted to the United Nations Security Council on 18 November 1998 (S/1998/1096).

International Crisis Group (20 December 2000) 'Scramble for the Congo: Anatomy of an Ugly War'.

International Peace Information Service (January 2002) 'Supporting the War Economy in the DRC: European Companies and the Coltan Trade'. Brussels: International Peace Information Service.

International Rescue Committee (2001) 'Mortality in Eastern Democratic Republic of Congo: Results From Eleven Mortality Surveys'. Bukavu and New York: IRC.

Jackson, S. (2001) 'Nos Richesses Sont Pillées: Economies de Guerre et Rumeurs de Crime dans les Kivus, République Démocratique du Congo', *Politique Africaine*, no. 84.

Kaldor, M. (1999) *New and Old Wars: Organized Violence in a Global Era*. Stanford, CA: Stanford University Press.

Lumbi, P. (10 April 2000) 'Guerre en RDC: Enjeux Economiques – Intérêts et Acteurs.' Kinshasa: Observatoire Gourvenance-Transparence.

MacGaffey, J. (1991) 'Historical, Cultural and Structural Dimensions of Zaire's Unrecorded Trade', in MacGaffey (ed.) *The Real Economy of Zaire: The Contribution of Smuggling and Other Unofficial Activities to National Wealth*. Philadelphia, PA: University of Pennsylvania Press.

MacGaffey, J. (1988) 'Evading Male Control: Women in the Second Economy in Zaire', in S. B. Stichter and J. L. Parpart (eds) *Patriarchy and Class*. Boulder, CO: Westview Press.

MacGaffey, J. (1986) 'Fending-For-Yourself: The Organization of the Second Economy in Zaire', in G. Nzongola-Ntalaja (ed.) *The Crisis in Zaire: Myths and Realities*. Trenton, NJ: Africa World Press.

MacGaffey, J. and R. Bazenguissa-Ganga (2000) *Congo-Paris: Transnational Traders on the Margins of the Law*. London: James Currey.

Mbembe, A. (2001) 'At the Edge of the World: Boundaries, Territoriality and Sovereignty in Africa', in A. Appadurai (ed.) *Globalization*. Minneapolis, MN: Minnesota University Press.

McCall, R. (1998) Prepared Statement by the Chief of Staff to the Administrator of the US Agency for International Development before the US House of Representatives Committee on International Relations Subcommittee on International Operations and Human Rights, 5 May.

MISNA News Agency (12 June 2002) 'Tension Said Rising Between Rival Rebel Groups Over Gold Mines'.

MISNA News Agency (8 June 2002) 'Residents Flee as Goma Rebels Clash with Tribal Militia in Eastern Drcongo'.

ODI (2002) *Adapted Sustainable Livelihoods Framework to Support Analysis in Situations of Conflict and Political Instability*. London: ODI.

POLE Institute (January 2002) 'The Coltan Phenomenon: How a Rare Mineral Has Changed the Life of the Population of War-Torn North Kivu Province in the Democratic Republic of Congo.' Goma: POLE Institute

POLE Institute/CREDAP (2000) 'Le Coltan et les Populations du Nord-Kivu'. Goma: Pole Institute.

Raikes, P., M. J. Friis and S. Ponte (2000) *Global Commodity Chain Analysis and the French Filière Approach: Comparison and Critique*, CDR Working Paper 3. Copenhagen: Centre for Development Research.

Save the Children Fund (January 2000) 'Evaluation de l'Economie Alimentaire des Ménages'.
Save the Children Fund (1999) 'Household Food Economy Assessment: Consultancy Visit to North and South Kivu on the Issue of Land Access', 18 September–1 October.
Schatzberg, M. G. (1988) *The Dialectics of Oppression in Zaïre*. Bloomington, IN: Indiana University Press.
Société Civile, Goma, Nord-Kivu (April 2001) 'Coltan: Comptoirs, Sites et Implication de l'APR dans les territoires de Masisi, Walikale et Goma, Rapport d'Enquête'.
SOS Grands Lacs (June 2002) Report on War Economies in the Congo.
Streiffeler, F. (1994) 'State Substitution and Market Liberalization in Northern Kivu, Zaire', *Sociologia Ruralis*, vol. 34, no. 1.
Die Tageszeitung (TAZ) (18 June 2002) 'DRC Government Aawards Oil Concesssion to Company with Mercenary Connection, German Daily Reports'.
UN Panel of Inquiry (2002) 'Interim Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of DR Congo', S/2002/565.
UN Panel of Inquiry (2001a) 'Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo', S/2001/357, April.
UN Panel of Inquiry (2001b) 'Addendum to the Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo', S/2001/1072.
Vlassenroot, K. (2000) 'The Promise of Ethnic Conflict: Militarisation and Enclave Formation in South Kivu', in D. Goyvaerts (ed.), *Conflict and Ethnicity in Central Africa*.
Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa.
Van Acker, F. and K. Vlassenroot (2001) 'Youth and Conflict in Kivu: "Komona Clair"', *Journal of Humanitarian Assistance*.
Vwakyanakazi, M. (1991) 'Import and Export in the Second Economy in North Kivu', in J. MacGaffey (ed.) *The Real Economy of Zaire: The Contribution of Smuggling and Other Unofficial Activities to National Wealth*. Philadelphia, PA: University of Pennsylvania Press.
Willame, J.-C. (1999) *L'Odyssée Kabila: Trajectoire Pour Un Congo Nouveau*. Paris: Karthala.
Zex-Kongo, J.-P. N. K. (1999) 'Du Zaïre au Congo: La Question Agraire au Nord-Kivu', *Afrique Politique*.
Zimbabwean Financial Gazette (13 June 2002) 'Officers Face Court Martial for Alleged Diversion of Rations'.

Endnotes

1 For macro-level research, see UN Panel of Inquiry, 2001a, 2001b, 2002; Lumbi, 2000; Global Witness, 2002. Micro-level analyses include POLE Institute, 2000, 2002; Jackson, 2001),

2 Off-the-record briefing to the author by a senior analyst, Nairobi, April 2002.

3 'Geologically tantalum often occurs with tin and until relatively recently, tantalum was regarded as an impurity that attracted penalties to the tin price'. Sons of Gwalia, www.sog.com.au/web/tantover.htm.

4 Sons of Gwalia, www.sog.com.au/web/tantover.htm.

5 Central African Mining Company, www.camec-plc.com/tantalum.html.

6 Interview, September 2001.

7 Interview with local NGO official, Goma, 30 July 2001.

8 Interview with senior UN official, Bukavu, 12 April 2002.

9 Interview with RCD mining official, Bukavu, 9 April 2002.

10 Interview with NGO researchers on coltan, Goma, 13 April 2002.

11 The ten or so commercial 'syndicates' which are the sanctioned buyers of the mineral ore. *Comptoirs* purchasing a variety of minerals were legalised by Mobutu during his 'economic liberalisation' phase; see Vwakyanakazi, 1991.

12 Interview with senior UN official, Bukavu, 12 April 2002.

13 Yet another casualty of the January 2002 volcanic eruptions in Goma was the loss of agricultural statistics by FAO.

14 Interview with local coltan researcher, Goma, 30 July 2001.

15 Interview with Rwandan security officer, Bukavu, 7 April 2002.

16 This detachment and segmentation predate the war, but have been considerably amplified by it. Fairhead (1993: 20, 21) argues that 'to talk of "the market" in Zaire is as problematic as to talk of "the state". Just as the state is ultimately made up of territorially-based hierarchies of power, so too one finds that markets for land, labour and goods are locally bound, politically managed and thus anything but free'. Moreover, 'widening road networks affect the entire structure of resources available to various kinds of people, not simply the price of traded commodities. And even more important, perhaps, the impact of the market is felt not only among households (promoting social stratification and the coalescence of classes) but within them. Members of households experience market changes differently, with implications for the structure and meaning of community and family life'.

17 While for many 'indigenous' ethnic groups this is further proof that the rwandophones were 'only pretending to be Congolese', many Congolese rwandophones deeply dislike the 'Kigali option': 'what would I know of Kigali? I'm Congolese – I know *nothing* of Rwanda' said one Congolese Tutsi taxi driver to me in Kigali in 2001.

18 Interview with Congolese UN officer, Goma, 3 August 2001.

19 Interview with local coltan researcher, Goma, 30 July 2001.

20 Interview with RCD mining official, Bukavu, 9 April 2002.

21 This is how people in the Kivus term the period when aid was plentiful. This was the artificially buoyant period for urbanites when the major international agencies were still responding to the enormous refugee crisis precipitated in the Kivus as a result of the 1994 Rwandan genocide.

22 Interview with local coltan researcher, 15 April 2002.