A Comprehensive Approach to Congo's Conflict Minerals

By the Enough Project Team with the Grassroots Reconciliation Group
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Introduction

The Enough Project is sounding the alarm. The Democratic Republic of the Congo, scene of the deadliest conflict since World War II, remains the most dangerous place in the world to be a woman or a girl—in significant part because of the international demand for electronic products that requires minerals found in the eastern Congo. While eastern Congo is a complex crisis—fueled by tensions over land, rights, identity, regional power struggles, and the fundamental weaknesses of Congo as a state—the trade in conflict minerals remains one of the key drivers of the conflict. The same armed groups that reap enormous profits from the mineral trade in eastern Congo regularly commit conscience-shocking atrocities as they jockey to control the region's most valuable mines, transportation routes and opportunities to impose extortionary 'taxes' on those involved in this trade.

Companies that produce electronics that could contain conflict minerals from eastern Congo have a responsibility to ensure that their business dealings are not inadvertently helping to fuel atrocities. This is not an easy task, but it is achievable. Electronics companies can pressure their suppliers and trace the minerals they use to ensure they do not originate from mines that are financing armed groups and criminal interests. Consumers and global citizens have a critical role to play in demanding that companies and governments exercise leverage over the supply chain to end the trade in Congo's conflict minerals.


MARK CRAEMER

Bringing transparency to the consumer electronics supply chain will be a significant first step toward transforming Congo's rich mineral resources, from a fuel for violence into an engine of empowerment for the millions of people caught up in the conflict and all those dependent upon the meager livelihoods they earn in mines throughout eastern Congo. The United States and other policymakers and activists can decisively alter these dynamics by focusing their attention on the international dimension of the trade in conflict minerals, and by ensuring that peacemaking efforts address the long-neglected political economy of the conflict.

To truly overcome the conflict minerals curse in eastern Congo, a more comprehensive approach will be necessary; one that embraces a significant, sustained, and long-term investment in Congo's security, governance, and livelihoods over a multi-year timeframe.

A comprehensive strategy to end the trade in Congo's conflict minerals should consist of four main parts:

1. Shining a light on the supply chain.
2. Identifying and securing strategic mines.
3. Reforming governance.
4. Supporting livelihoods and economic opportunities for miners.

Finally, any effort to address the conflict minerals problem must be wed to a broader strategy to generate the political will in Congo and among its neighbors to find diplomatic solutions to the local, national, and regional tensions that have proliferated over the past 15 years. Transparency and accountability must extend across borders to include other governments in the region. Rwanda, Uganda, and Burundi (to a lesser degree) have profited enormously from the illicit minerals trade and Congo's continued instability—to which they have directly contributed at times. By the same token, Congo's neighbors have legitimate security concerns and economic interests in eastern Congo, and a more even-handed approach to these regional actors from the United States and its allies is vital to address these security concerns, ending the prominent role these states continue to play in the destructive conflict minerals trade, and promoting the rule of law in Congo and beyond.

The conflict minerals supply chain: From Congolese mines to worldwide markets

The majority of the violence in eastern Congo has been carried out in mineral-rich areas of the eastern provinces of North and South Kivu and Orientale. This is no accident. In remote areas that remain beyond the control of the Congolese state, the armed groups that perpetrate the violence also control much of the minerals trade. The Democratic Liberation Forces of Rwanda, or FDLR (Rwandan militias led by some of the perpetrators of the 1994 genocide), autonomous or renegade units of the Congolese Army, Mai Mai groups, and other militia groups control many mining areas, while the rebel National Congress for the Defense of the People, or CNDP (the rebel group previously headed by Laurent Nkunda and supported by Rwanda), has profited from its control of border posts and taxation of the trade in these minerals.[1]

What minerals are traded? The 3Ts and gold

The armed groups trade in the 3Ts— the mineral ores that produce the metals tin, tantalum, and tungsten— as well as gold. The percentage of world production of these minerals coming from Congo varies by substance. Congo produces an estimated 6 to 8 percent of the world's tin, making it the sixth largest producer.[2] Additionally, Congo accounts for 15-20 percent of the global production of tantalum, which has recently increased due to the closure of Australian tantalum mines that had been the largest world producers. In a statement announcing its closure, the Australian mining company Talison attributed its decision to the inability to compete with cut-rate production from Central Africa, particularly from the Democratic Republic of the Congo where the trade in conflict minerals thrives.[3] For tungsten, Congo remains a minor player at only 2 to 4 percent of world production. However, this mineral is a growing source of financing for armed groups. Similarly, Congo's gold production is less than one percent of global production, but is a critical source of financing, especially for the FDLR. For more detail, see Appendix 1.

Estimating the profits that armed groups earn from the minerals trade is a challenging endeavor, given the difficulty of obtaining reliable data for a trade that is rife with smuggling and deliberate efforts by those who profit from the illicit trade to cover their paper trail. However, based on available data, we estimate that in 2008 armed groups in Congo earned approximately $185 million from the trade. In many ways, this is a well-educated guess, and we hope that this figure and our calculations can initiate a broader, more detailed exploration that leads to greater transparency. For a detailed breakdown of the calculations used to arrive at this estimate, see Annex 2.

Mining sites are spread across a vast swathe of eastern Congo and run the gamut from large-scale operations such as Bisie mine in Walikale territory, which employs approximately 2,000 miners, to scattered holes in the ground mined by just a handful of workers. All of the mining in conflict areas is artisanal—it uses manual labor, simple tools, and only the most basic of technologies. This is the case throughout much of Congo. Even in Katanga province, home to the copper and cobalt mines that dominate the mining sector, much of the current production is artisanal and large-scale industrial operations remain predominantly in the exploration phase. Unfortunately, under the current Congolese legal framework, all artisanal mining in eastern Congo is technically illegal, because none of the mining areas have been officially designated as artisanal mining zones. This lack of a viable legal framework for even legitimate mining efforts complicates efforts to deal with the predatory armed groups that dominate, but do not entirely control, the sector.

Congo's other mineral wealth

The 3T and gold minerals represent one key part of Congo's vast mineral wealth, which consists of more than 1,100 mineral substances spread across 2.3 million acres, according to the World Bank. Other key areas rich in natural resources include Katanga, which has large-scale copper and cobalt mines, and the diamond-rich Kasai province. These areas are not currently experiencing armed conflict, and thus their products are not considered conflict minerals.

The challenges related to harnessing all of Congo's natural resources for the benefit of its people are enormous and vital to the country's long-term development. The mining sector is also controversial, especially given the high profile role of Western and Chinese investments. The Congolese government has been conducting a comprehensive review and renegotiation of all mining contracts since 2007. This was scheduled to be completed in April 2009, but was extended for an additional six months.

The 3Ts: Minerals or metals?

Before they are refined further up the supply chain, the minerals that are mined in eastern Congo are in ore form. In this form, they are often given a different name.

In eastern Congo:

- **Tin ore:** cassiterite
- **Tantalum ore:** "coltan" or columbite-tantalite
- **Tungsten ore:** wolframite

Once processed or smelted, the mineral ore becomes metals.

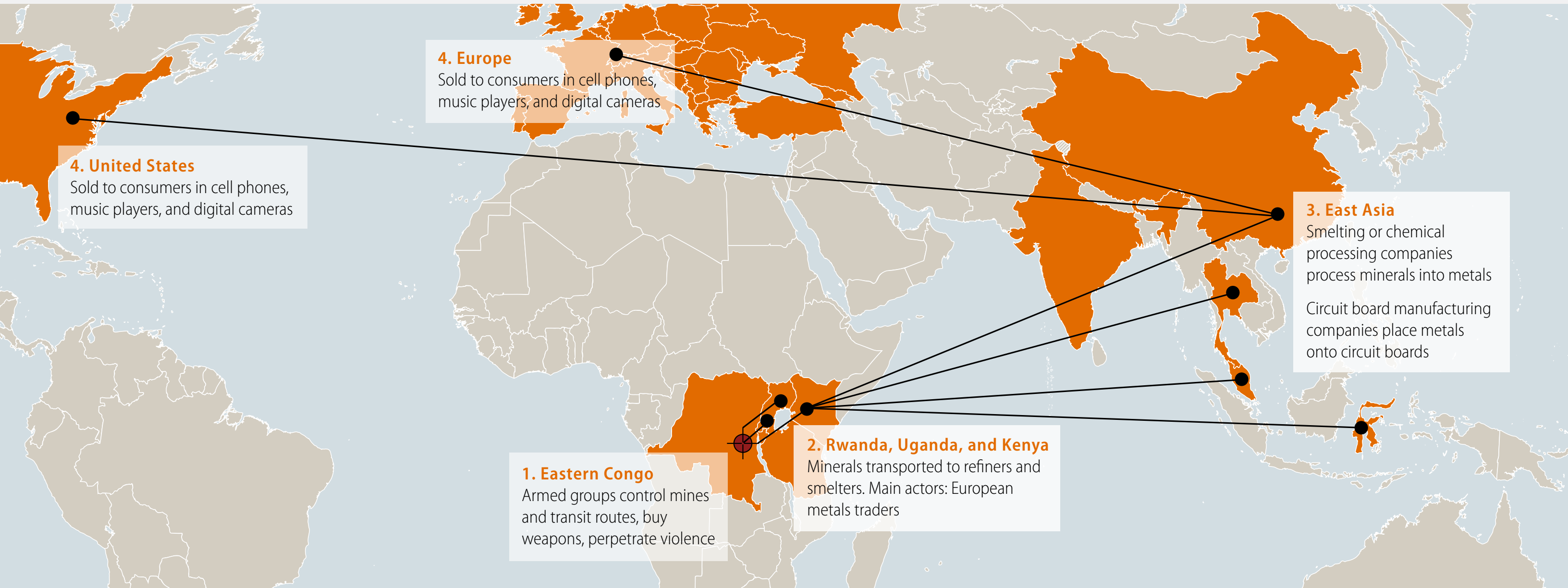
Armed groups profit from the minerals trade in two primary ways:

- **Controlling the mines**, forcing miners to work in desperate and dangerous conditions while paying them a pittance -- an average of $1 to $5 per day.[4] The extent of the presence of armed groups at the mining sites and the degree of coercion they utilize varies by site and by armed group.

- **Exacting bribes and taxes from transporters,** local and international buyers, and at border controls. This begins with road blocks just outside the mining sites, but also includes co-opting those state institutions that are present in eastern Congo as well as local traditional authorities.

The link between armed groups and the mineral trade has been extensively documented by the United Nations and NGOs. The latest U.N. Group of Experts report in December 2008 cited that the FDLR controls the majority of mines in South Kivu. The former CNDP, now allied with the government after a March 23, 2009 peace accord, never directly controlled many mines, but was able to dominate much of the trade through its control of key border posts.[5] *Africa Confidential* reported that in March 2008 two tons of minerals were seized at Goma airport from Congolese soldiers and militias.[6] The Pole Institute has documented extensive FDLR involvement in the tin, tantalum, and gold mines.[7] Global Witness reported that the FDLR and Congolese Army were working together to trade minerals in September 2008.[8] Furthermore, recent research regarding Bisie mine in Walikale territory in North Kivu, which accounts for 70 percent of the cassiterite ore exported from Goma, suggests that the military, business, and political elites who control the trade gain 70 percent of the benefits of the cassiterite mining, with little profits flowing to the actual miners or transporters.[9]

Conflict minerals supply chain



From eastern Congo, minerals are transported through neighboring countries including Rwanda, Uganda, and Burundi. Because export taxes from eastern Congo are much higher compared with those of its neighbors, the buying houses—or "comptoirs"—that export minerals have a strong incentive to underreport the quantity of minerals they process or, at times, smuggle them across poorly regulated and often corrupt border crossings.[10] The British Department for International Development, or DFID, estimates that official Congolese government figures represent less than 30 percent of the actual trade in tin ore.[11] International traders frequently misreport these resources as having originated in Rwanda, Uganda, or other countries in the region, to avoid the taint of "conflict minerals" from Congo. Illustratively, Rwanda reported 2,679 tons of tin exports in the first half of 2008, yet its major mine at Gatumba produces only five tons of tin per month.[12]

From the region, minerals are shipped via the ports of Mombasa, Kenya and Dar es Salaam, Tanzania, mainly to Asia, where multinational smelting and processing companies in Malaysia, Thailand, China, and elsewhere process the minerals into metals.[13] American and German-based tantalum processing companies, as well as Belgian metals trading companies, may also be purchasing minerals from the other armed groups in eastern Congo, the CNDP, and the Congolese Army.[14] These metals are purchased by companies that manufacture electronics components such as capacitors and circuit boards. In turn, these components are supplied to the makers of electronics devices, including top-selling devices such as cell phones, portable music players, video games, and digital cameras.[15]

Why are current efforts falling short?

Actions to address the conflict in eastern Congo have largely been reactive and incommensurate to the scale of the problem. The international community has spent billions on elections and peacekeeping, but despite the extensive documentation of Congo's war economy by two separate U.N. investigations, existing peacemaking efforts have failed to address the economic drivers of the conflict. There hasn't been a coherent approach to alter the incentive structures of Congo's conflict mineral trade and its devastating impact in helping to keep Congo's institutions weak and dysfunctional. Efforts to date have either focused exclusively on sanctioning individual malfeasance or on piecemeal capacity building for institutions. Some of these initiatives have the potential to contribute to developing much needed legitimate economic opportunities in eastern Congo, but they have thus far sorely lacked the coherence and diplomatic momentum necessary to alter the status quo. As a result, ordinary Congolese remain trapped, their livelihoods dependent on an exploitative minerals trade. Violent armed groups remain well-financed as they rob the state of resources that belong collectively to Congo's people. Meanwhile, western consumers continue to purchase electronics products, unaware that their devices may be fueling this viscous cycle of despair.

The Congolese government: Leadership and capacity deficits

The Congolese government lacks meaningful control over the mineral-rich areas of the Kivus and neighboring provinces. There remains a significant discrepancy between the legal framework that ostensibly governs mining and trade in Congo and practices on the ground. Although Congo's Mining Code was revised in 2002 to bring it in accord with international standards, it is effectively disregarded in eastern Congo, or, even worse, as Mining Expert Nicholas Garrett argued, it

is "used by the powerful to exploit artisanal miners through manipulation, harassment, and extortion."[16] An intricate patchwork of government agencies and regulatory bodies are responsible for oversight and taxation of mining and trade in mineral wealth. The Pole Institute has documented 25 different Congolese government agencies that have a role in regulating the minerals trade in Goma.[17] To the extent that these bodies are actually present in mining areas, trading hubs, or at border crossings, they function more as a means of collecting 'taxes' which never make it in to government coffers rather than as legitimate public institutions.[18]

Although Congolese authorities may need resources and expertise to help ensure that the country's mineral wealth benefits the state and its citizens rather than armed groups and criminal networks, capacity is only part of the story. The U.N. Panel of Experts concluded in 2002 that, "The most important element in effectively halting the illegal exploitation of resources in the Democratic Republic of Congo relates to the political will of those who support, protect, and benefit from the networks."[19] Government, businessmen, and civil society must work together to forge the political will to legitimize Congo's mineral wealth.

Incoherent international efforts

A range of international efforts have endeavored to address Congo's conflict minerals. Beginning in 2001, the U.N. Security Council authorized the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo—usually known by the more manageable "Group of Experts" title—which produced a series of reports that illustrated the extent of the war economy operating on all sides of the war in Congo. In 2004, following the imposition of an arms embargo and targeted sanctions regime for Congo, the Security Council established a second Group of Experts with a more narrow focus on monitoring the provisions of the sanctions regime. The series of in-depth investigative reports produced by both U.N. expert bodies illustrate the continuous economic underpinnings of insecurity in eastern Congo, despite the political progress the country has experienced during this period. The specific measures recommended by these groups have varied over time, ranging from an embargo on select conflict minerals to more attenuated measures such as a traceability system for mineral supply chains or due diligence requirements for companies buying minerals from the region.

The prospect of imposing sanctions on minerals emanating from conflict-ridden areas of eastern Congo has proved controversial. In 2006, the U.N. Group of Experts recommended that the Security Council "declare all illegal exploration, exploitation, and commerce with the natural resources of the Democratic Republic of the Congo to be a sanctionable act."[20] A subsequent U.N. report examined the potential humanitarian fallout from such sanctions and warned that such sanctions could hurt the livelihoods of as many as 2 million artisanal miners and their families because all of these miners operate outside Congo's formal legal framework under current conditions.[21]

A potentially promising long-term initiative has been championed by the German government and the G-8: the development of Certified Trading Chains, or CTCs, with legitimate mining sites linked to international purchasers. This initiative is connected with scientific efforts to "fingerprint" specific minerals to their geological origin and enable their traceability.[22] The German government has bilateral assistance programs with both Congo and Rwanda to help develop such a system for tantalum, with possible expansion to also include the other minerals. Other private companies have also stated that the technologies exist to trace tin and other metals, utilizing isotope testing. However, implementing this initiative would entail huge challenges in terms of logistics, political opposition, and costs. The United Nations and other major donor governments like the United States have remained skeptical of a CTC approach, and thus it probably only has promise over a much longer period of time than would be ideal.

In addition to the above efforts to break the link between conflict and trade in natural resources, substantial international assistance has been directed toward building the capacity of Congolese institutions. The World Bank has developed a comprehensive plan for Growth with Governance in the Mining Sector, and donor agencies, including the U.S. Agency for International Development, or USAID, and DFID have developed a joint initiative known as Trading for Peace, which seeks to use the trade in natural resources to build peace in the region. Trading for Peace has recently published a reform agenda that encapsulates many of the elements necessary to help legitimize regional trade, but such development efforts will have to be married to a viable political strategy if they are to achieve critical mass. USAID has also funded the NGO PACT, which has piloted work in partnership with international mining companies to improve conditions for miners and their dependents in the Katanga and Ituri regions, but no such efforts have yet targeted the Kivus.

Certification programs and development efforts hold out the possibility of technical or developmental solutions, but they must be implemented with the understanding that the problem is fundamentally a political one. Certification is the only long-run solution to distinguish between 'conflict' and 'clean' minerals, but it will require political buy-in to function effectively, and a dysfunctional certification scheme could prove worse than none at all. Likewise, if development efforts are not coupled with a political strategy to isolate the more egregious actors and make trading with rights abusers' unacceptable behavior, they risk legitimizing the status quo and harming the civilians they seek to help. These initiatives can and should complement a political strategy, but they cannot act as a substitute for it.

The regional dimension

Regional politics complicate the question of Congo's conflict minerals but also offer the best prospects for a long-term solution to this issue. Eastern Congo's mineral wealth travels to international markets via well-documented trading routes through neighboring states, notably Rwanda and Uganda. From 1998 to 2003, both states occupied and systematically looted large swathes of the Congo. Legal cases at the International Court of Justice ruled that the Congolese government should be paid billions of dollars in reparations for the illegal activities undertaken during that period.[23] The recent operations by both the Rwandan and Ugandan armies in Congo have understandably sparked suspicions that actions against both the FDLR and the LRA could lead to continued foreign military control of Congo's mineral wealth.

However, regional states stand to gain from a more cooperative future approach, which partly explains why, in December 2006, 11 regional heads of state committed to a Protocol Against the Illegal Exploitation of Natural Resources as part of the International Conference on the Great Lakes Region.[24] Although regional cooperation on this issue has moved at a glacial pace, it offers a potentially innovative, locally-driven mechanism for establishing cross-border collaboration in the development of trading mechanisms that could contribute to a more enabling climate for international investment. The German government has now situated technical advisors on mineral certification within the secretariat of the conference in Bujumbura, Burundi, a commendable first step toward encouraging a regional approach.

Toward a comprehensive strategy

There is no silver bullet solution to Congo's conflict minerals. But if the Congolese and regional governments, the international community, and the private sector can align their efforts on the common goal of a revitalized legitimate mineral trade in eastern Congo, it would have a major impact in resolving the conflict. Although the United States has played an important leadership role in facilitating political negotiations aimed at resolving chronic conflict in eastern Congo, it has largely abdicated responsibility for addressing the economics that perpetuate the conflict. A new strategy must tackle the political economy of the conflict head-on.

The reform of Congolese institutions is a long-term goal, but critical prerequisites and first steps can be undertaken in the next 12 months. Action must be taken to prevent the flight of investment away from Congo and to harness the potential of the private sector to contribute to recovery in the East. Although the effects of the global economic downturn pose a threat to Congo at the moment, they also present an opportunity to sow the seeds of reform. In the face of political pressures generated by the commodity boom, prior government efforts, including the review of mining contracts and the Lutundula Commission, failed to achieve significant reforms.[25] Now, while the Congolese government needs outside capital, there is a window of opportunity to implement improved governance and economic policies. These policies will help to ensure that benefits from the country's mineral wealth accrue to the miners and their families, not to criminal enterprises.

There are four intertwined components to a new strategy to reduce the trade in conflict minerals and help empower the Congolese state and its citizens that should be carried out in conjunction with vigorous enforcement of strengthened sanctions against the individuals and middlemen buying minerals from armed groups.

1. Shine a light on the supply chain

Transparency is the first step toward altering the conflict economy in Congo. The ability of end users to trace and audit the supply chains for the metal components in their electronics products is a critical step to channeling international demand away from armed groups and toward legitimate sources.

MARK CRAEMER

BUILDING LEVERAGE VIA END USERS

The electronics industry is the principal end user of the four main minerals mined in eastern Congo and the link in the supply chain over which the United States has the most leverage.[26] Profit maximizing pressures from the electronics industry have driven demand for Congo's conflict minerals, produced cheaply as a result of the medieval conditions in which they are mined and the illicit networks that funnel them out of Africa.[27] A number of other industries also use the 3T minerals: for tin, this includes the food, aerosol, and pet food can industries;[28] for tungsten, industrial construction—for drill bits and industrial cutting equipment—and light bulb industries;[29] for gold, jewelry and banks—which purchase gold as investments and for reserves.

Lessons from other campaigns show that when pressured, these end user companies can dramatically influence middle companies further down the supply chain (suppliers, smelters, etc). Wal-Mart, for example, was able to influence its suppliers in China to change their packaging practices. Campaign strategists have further highlighted that campaigns focusing on consumer companies and visible brands resonate with a much wider public and therefore have a higher chance of success. An effective public campaign on the electronics industry should have a multiplier effect on the other key industries in changing their calculations.

International advocacy and corporate engagement on this issue has already started in Europe thanks to the work of the NGO coalition, Make IT Fair. Largely due to their advocacy efforts, an electronics industry corporate social responsibility association, the Electronics Industry Citizenship Coalition, or EICC, commissioned research on the metals supply chain in 2008.[30] Following the report, the EICC agreed to initiate a supply chain transparency model for tin, tantalum, and cobalt and issued a statement recognizing that "they can influence standards throughout the supply chain and within the wider industry."[31] This is an important admission, but industry-led efforts have thus far fallen short on the level of transparency necessary to make a difference. Companies currently only provide vague written assurances from suppliers that they do traffic in Congo's conflict minerals. There is no mechanism to undertake independent verification or audited chains of custody. Advocacy efforts must ensure that companies do not simply paper over concerns with anodyne reports and statements. Declarations by electronics company suppliers that they are not buying from illegal mines in Congo are a beginning, but they do not provide *proof* that consumer electronics do not contain conflict minerals.

Building on these efforts, consumers and activists need to demand independently verifiable supply chain audits to ensure that products are indeed conflict-free. This should not be a boycott of Congolese minerals, but rather more stringent requirements for purchasing of minerals so that consumers can be credibly assured that armed groups are not benefiting from illicit activity or the subjugation of local populations. Numerous industry sources have confirmed in interviews that tracing these minerals is possible. For example, Wal-Mart's "Love Earth" jewelry line has proved that it is possible to implement a system that places a FedEx-like tracking number on gold shipments from the mine of origin all the way to the shopping mall, tracking each step along the way. Setting up such a system will be a challenge: it will entail significant costs, and the incentives to falsify documentation must be addressed as part of this effort.

There are two keys to an effective system: compelling the key players in the supply chain to work together to create a tracing system, and implementing credible monitoring of the system by independent third parties. To develop this tracing system, the electronics industry should work together with its suppliers—from solder manufacturers to tantalum processing companies to tin smelters— who have more information on the sources of the minerals used. This will entail a multi-sector, cross-supply chain effort. Independent third-party verification is more challenging. The example of the Kimberley Process for diamonds has fallen short in this regard, with industry "self-policing" and the lack of independent audit requirements leading to gaping holes in diamond transaction declarations. For example, a U.S. State Department report recently discovered that Lebanon was grossly misreporting the prices and sources of its rough diamonds, which may have resulted in illicit financing of Hezbollah.[32] We need to improve upon this decidedly-mixed track record. Mine-of-origin declarations and supply chain audits should be verified by third-parties with the skill-set to properly monitor metals transactions, such as forensic accountants, or the U.S. Customs Department, which has supply chain specialist teams. The German mineral fingerprinting initiative, if properly implemented, would be extremely helpful in this regard.

RAMPING UP PRESSURE ON KEY MIDDLEMEN

Although altering the risk calculations and business practices of companies along the supply chain has the potential to positively impact the economic incentives that sustain the conflict, it also runs the risk of unanticipated consequences. If international companies simply walk away from Congo and the market for all its minerals dries up, this could make the situation on the ground worse. Out–of-work miners could be tempted to swell the ranks of the armed groups in order to secure their livelihoods. Mitigating these effects requires not only comprehensive support to legitimize the mining sector in Congo, but also outreach to those companies in the supply chain who have a vested interest in the survival of the market for Congolese minerals.

Companies operating at the critical chokepoints in the mineral supply chain will need to feel the costs of continuing the status quo in order to embrace the benefits of more responsible behavior. The Congolese, regional, and international actors working as "comptoirs," traders, and brokers moving minerals from Congo onto world markets are currently operating across both licit and illicit economies. U.N. Security Council Resolution 1857, passed following the release of the latest Group of Experts report, has significantly increased international pressure on these actors, widening sanctions criteria to include "individuals or entities supporting the illegal armed groups … through the illicit trade of natural resources." The resolution also encourages governments to submit information to the Security Council on targets for sanctions, and to take measures to ensure that the companies involved in the minerals supply chain exercise due diligence regarding their purchasing of minerals. The Security Council and regional governments must signal to these companies that they have a choice: become part of the solution by severing all ties to the armed groups and supporting reform efforts on the ground or face sanctions. Providing the correct mix of incentives to keep these players from driving the trade further underground will be a crucial component of providing legitimate economic opportunities in the formal economic sector in eastern Congo.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The following measures would have a lasting impact on increasing transparency:

- **Industry should trace and audit their supply chains:** Companies, particularly those in the electronics industry, should trace the 3Ts and gold in their products down to the mine of origin. It is understandable that end user companies may not currently have this information, but they should work closely with their suppliers and smelting companies to obtain this information, as the alternative is continued demand for conflict minerals. They should also have independent audits conducted of their supply chains that show chain of custody for each step along the 3T mineral supply chain.

- **Governments should buttress supply chain action:** The United States and other governments should vigorously support implementation of the Security Council Resolution 1857. This should include increased targeted sanctions, as well as legislation to require independent audits, tracing of minerals to mine of origin, and other stringent due diligence. Legislation should be backed with strong monitoring and oversight by U.S. government agencies, including the Homeland Security and State Departments, to guard against misreporting.

2. Identify and secure strategic mines

The U.N. Group of Experts has documented how armed groups on all sides of the conflict, including the Congolese military, profit from resource exploitation and threaten the local population. They control mines, tax commerce, and prey upon civilians involved in the trade. State mining inspectors are intimidated or co-opted by armed groups and are incapable of reigning in these activities. While MONUC's mandate has recently been broadened to monitor illicit resource flows, it will take a much more concerted international investment to truly change the security calculus in the mineral-rich areas.

Changing this situation requires physically securing the major mines and wresting them away from the control of armed groups. This is an urgent priority, but has thus far been ignored by the UN and other actors. The recent joint Congo-Rwanda military operation—ostensibly against the FDLR, though direct engagements with the FLDR were infrequent—removal of CNDP leader Laurent Nkunda, and incorporation of CNDP into the local political and military authorities in North Kivu has jolted the status quo. A mutually acceptable security context around the mineral trade in eastern Congo is a critical component of a lasting détente between Kinshasa and Kigali, and the international community has an opportunity in the wake of recent events to support solutions that benefit ordinary Congolese.

Different strategies must be employed for armed groups with diverse origins and agendas. Former CNDP, Mai Mai groups, and non-integrated army brigades may be best dealt with via security sector reform. These efforts are unlikely to completely demilitarize the mining sector in the short-run, but have the best prospects of shifting the status quo toward fostering legitimate trade in the medium-term. In contrast, operations against the FDLR will require much more military strength in a concentrated effort to weaken the FDLR leadership, deny them access to minerals wealth, encourage defections, and protect civilians from reprisals.

In the short-term, poorly planned action by ill-disciplined Congolese forces incapable of protecting civilians or actually holding FDLR territory will only compound already dire circumstances in Congo. But the identification of strategic mining sites can begin now. MONUC should collaborate with the government of Congo in identifying key mining sites under the control of armed groups. Such efforts should not focus on any one militia, but instead should be selected based on size, proximity to transit routes, and the ability of MONUC or trained and vetted Congolese forces to maintain their security.

Properly integrated Congolese security forces—supported by MONUC and international military observers—should secure these mining sites and the transit routes associated with their trading chains, including select airfields, ports, and border crossings. To the maximum extent possible, this should be carried out via negotiation and with positive incentives for commanders willing to relinquish their hold over these sites and enter into DDR programs. Such initiatives will require a far more robust approach than prior Congolese demobilization programs, which have wound up providing cover for continued coercive minerals exploitation without reducing its militarization. With thorough vetting to screen for human rights abusers, and following a significant training process, the rank-and-file from armed groups should become eligible for integration into security services. Together with a strengthened MONUC, such a force could provide the immediate physical security necessary to regulate the trade in minerals, from these specific mines to markets to export points in eastern Congo. This approach must be grounded in a more comprehensive and coherent effort to support broad security sector reform in Congo.

Securing critical mining sites

There are hundreds of mines controlled by gunpoint in eastern Congo. But these following mines are particularly key to armed groups:

- **Bisie Mine, Walikale District, North Kivu:** Produces the lion's share of tin ore in North Kivu. Recently shifted hands from the non-integrated 85th Brigade of the Congolese Army—a de facto Mai Mai militia—to an integrated brigade under the command of a CNDP commander, Colonel Manzi. It is unclear whether the new soldiers are physically present in the mines, but they are already active at checkpoints and are taxing miners.33

- **Lueshe Pyrochlore Mine, Rutshuru District, North Kivu:** Now under the control of the Congolese Army and CNDP. One of the few industrial mining sites in the Kivus, produces Niobium, which is closely related to Tantalum. One of the sites most immediately conducive to start-up of industrial operations.

- **Bisembe, Mwenga Territory, South Kivu:** Mines around Mwenga are controlled militarily and economically by the FDLR, who have established a mini-state in this region of South Kivu. Securing this area will require significant efforts to sever the FDLR's military and administrative control, and should only be considered with ample planning, including provisions to protect civilians.

Other important mining areas include the Misisi gold mine in Fizi, South Kivu, tin, tantalum and gold mines in Ziralo, Kalehe South Kivu and the gold mines around Ksugho in North Kivu's Lubero territory.

3. Reform governance structures

Congo's mineral wealth enriches networks composed of local and international businessmen, militia leaders, and politicians who benefit from resources that should form the basis for a legitimate state authority. State building efforts in eastern Congo have focused on the most basic aspects of extending the writ of the state – putting select roads under the control of government authorities. While this is an important first step, such efforts will prove unsustainable without a revenue base for local and provincial authorities. Bringing part of the mining economy under state control could provide this much-needed base of support and would develop a highly visible legitimate mineral trade upon which substantial international support could be focused. In an assessment of North Kivu's cassiterite trade for the World Bank, Consultant Nicholas Garrett refers to this concept as "Islands of Integrity, with positive spillover effects in other regions." Because of the severity of the corruption challenges and the extent to which Congolese mining officials are at the mercy of armed groups, an intrusive but temporary internationalization of the mining sector will be required to assure that sufficient revenues from mining and trade flow back to official government coffers.

The international community should work hand in hand with the Congolese government to forge the political will and capacity to exercise control over mining and commerce in eastern Congo. The building blocks of such an effort are outlined in the World Bank strategy, but require a greater focus on the particular dimensions of the resource conflict in the eastern provinces. Congo's endemic corruption and the highly sophisticated networks that dominate the mineral trade are sizeable obstacles to reform. But with the Congolese government on the verge of a balance-of-payments crisis and sorely in need of emergency funds from the World Bank, the International Monetary Fund and donor governments, the international community has an opportunity to press for not just commitments but demonstrable reforms to the regulation of mining, commerce, and taxation regimes.

The following policy initiatives would have a lasting impact in reforming governance structures:

- **Dialogue to forge political will for reform:** The United States and MONUC should work with international and Congolese partners to begin an inclusive process of dialogue around mineral trade reform in eastern Congo. Such a process needs to include a broad range of stakeholders—representatives of mining communities, civil society organizations, *comptoirs*, and the business community, as well as local, provincial, and national governments.[34] Political talks via the Tripartite Plus process are encouraging, but must be only the first part of a wider, inclusive process.

- **Donor coordination around a joint effort to support reform:** Piecemeal reform and uncoordinated interventions should give way to coordinated international cooperation to support legitimate trade in minerals. The Certified Trading Chain concept developed by the German government provides a useful frame for such an initiative, but prioritization of locally led efforts and Congolese institutions must be the priority.

- **The establishment of a Transitional Mining Authority in eastern Congo alongside government capacity-building:** Given corruption's potential to undermine mining reform, a time-bound internationalized effort to provide greater transparency and accountability appears necessary. This authority could be made up of Congolese and international technocrats and oversee the provincial mining authorities in North and South Kivu. Over a three- to five-year period, a mining authority would provide greater regulation of the mineral trade, improve revenue collection, and work with existing government agencies to develop a cadre of mining and customs officials capable of handling these tasks on their own. The exact nature and extent of such an initiative must flow from dialogue and coordination. Options could run the gamut from as comprehensive a system as the Governance and Economic Management Assistance program in Liberia to more limited options such as the Crown Agents/Department for International Development customs reform in Mozambique. [35]

- **Regional export harmonization to remove incentives for smuggling via neighboring countries:** Due to drastically different tariff rates, exporting a container of tin ore from Rwanda costs $200 in taxes, while exporting the same container from the DRC costs $6,500. This creates incentives for smuggling, and therefore a need to harmonize export regimes. Each Great Lakes country has a large potential interest in a legitimate minerals trade, and the United States and international community should work with these states to build mutually reinforcing export tax regimes. This could be developed under the Great Lakes Regional Pact and Protocol on Natural Resources, a legislative instrument signed by all the relevant heads of state.

4. Support livelihoods and economic opportunities for miners

Impoverished Congolese miners and their families are often entirely dependent on their meager income from mining, and they currently have few viable economic alternatives to lift them out of this indentured servitude. Miners also face incredibly difficult and dangerous physical conditions in carrying out their work. These factors make it all the more important to manage reform efforts in such a way that it does not make life even more difficult for these miners and their families. Efforts to end the trade in conflict minerals absolutely must be accompanied by international support for livelihoods and economic opportunities in eastern Congo. This should include:

- **Creating legal, organizational space for artisanal miners:** Artisanal mining is often illegal in the DRC, which marginalizes the sector and further perpetuates poverty. Donors should work with the Congolese government to reform the DRC Mining Code to formalize artisanal mining and enable artisanal miners to form cooperative societies and customary mining groups. This would also allow for greater legal investment in artisanal mining.

- **Infrastructure:** The World Bank and donor countries should work to help reconstruct the roads that will reconnect eastern Congo with trade routes to western Congo and the Rift Valley so that other sectors can benefit from trade. Infrastructure projects with guaranteed labor at decent wages can help lure miners out of conflict mines and create opportunities for demobilized combatants.

- **Private investment:** Larger firms can raise miners' living standards if independently verifiable mechanisms are put in place to ensure that the corporations are not contributing to armed groups, and health, safety, and labor standards are observed at mining sites. Private investment can be a part of the solution if a tracing mechanism is in place and appropriate standards are observed.

- **Alternative livelihoods:** International investment should be stepped up in agricultural development initiatives in eastern Congo, which mining has displaced in recent years. Good models for agricultural investments in mining areas exist in Sierra Leone. These have involved innovative public-private partnerships, such as that between USAID, the jeweler Tiffany, and the Foundation for Environmental Security and Sustainability. Other livelihood initiatives, such as small business development projects, should also be promoted. All projects should be designed in close partnership with miners themselves, and should also be followed up with education initiatives for miners.

Conclusion

The Congo conflict minerals problem is complex, but the roadmap to a solution exists. The four key parts of this strategy—a transparent supply chain, secure mining sites, improved governance of mining and trade, and improved livelihood options for miners—are all realistic policy goals. Achieving them will require coherence and commitment from both the Congolese government and the international community. But efforts won't succeed unless individual consumers in the United States and around the world step up and demand a change. Absent focused pressure on companies and governments alike, the best we can expect is half-measures that perhaps provide a semblance of reform but allow the coercive exploitation of Congo's natural wealth to continue. Calling or emailing top electronics manufacturers and telling them to ensure that their products are conflict-free will help to create the conditions necessary to end the war in Congo. You can also ensure that your voice is heard by endorsing our Conflict Minerals Pledge online.

Breaking the stranglehold of corruption and violence in eastern Congo will not be easy, nor will helping Congolese build legitimate institutions that represent their interests. But consumers and their elected representatives have the opportunity to decisively alter the dynamics of conflict in the Great Lakes Region by finally focusing international attention on the economic drivers of this human rights catastrophe. By demanding transparency and accountability from the world's largest electronics companies, consumers can fundamentally change the logic of Congo's conflict and end the scourge of conflict minerals.

Appendix 1: Percentages of the 3Ts and gold that come from eastern Congo: 2008

50
Sn
Tin

Tin: between 6-8 percent[36]
- Estimated production from eastern DRC: 24,592 tons.[37]
- Estimated world production in 2008: 350,000 tons.[38]

73
Ta
Tantalum

Tantalum: between 15-20 percent[39]
- Estimated production from eastern DRC: 155 tons.[40]
- Estimated world production in 2008: 815 tons.[41]

74
W
Tungsten

Tungsten: between 2-4 percent
- Estimated production from eastern DRC: 1,300 tons.[42]
- Estimated world production in 2008: 54,600 tons.[43]

79
Au
Gold

Gold: less than 1 percent
- Estimated production from eastern DRC: 6.5 tons.[44]
- Estimated world production in 2008: 2,330 tons.[45]

Appendix 2: Methodology for estimating the profit of armed groups

It is our hope that continued dialogue and consultation on the profits reaped by armed groups from the conflict minerals trade will help researchers, policymakers, and industry develop more accurate, transparent, and reliable figures. The calculations provided here are well-educated estimates, and we welcome any insight others can provide on the topic.

The data on armed groups' profits from the conflict minerals trade is estimated based on four main sources. We start with a recognition that this trade is difficult to track with precise detail because of the frequent underreporting of both quantity and price by official Congolese government official agencies—as numerous research reports have documented. That said, extensive field research has been conducted on this issue over the past three years, which we believe provides the basis for a reasonable estimated range of profit sharing. The data takes into account that three main armed groups—the FDLR, the CNDP, and renegade units of the Congolese Army—are profiting from the trade in two main ways: controlling a percentage of the mines and controlling a percentage of the transportation of the minerals from mine to point of export. As a starting point for the 3Ts, we use the official 2008 Division of Mines data for North Kivu and Private Sector Federation data for South Kivu as a starting point for the 3T minerals, as reported by Garrett and Mitchell in April 2009. As the Pole Institute and others have highlighted, the majority of the 3T minerals are not smuggled, but rather are underreported. Second, we use Garrett and Mitchell's rate of 35 percent underreporting of amounts of export by weight for the 3Ts. This is a conservative estimate—previous estimates by the Pole Institute, the Initiative for Central Africa, DFID, and others had put the rates at 40-130 percent—and assumes that official data collection has improved over the past three years. The 35 percent rate is also partially based on the discrepancies between firsthand observations of the tin ore coming from Bisie mine by the Pole Institute, DGM Kilambo, and Garrett, on the one hand, and dramatically lower data for the same tin ore being exported at Goma. Third, for estimates of the percentage of mines and transport routes controlled by armed groups, we use the U.N. Group of Experts data from December 2008 as well as independent reporting by Africa Confidential and minerals traders from the region. Finally, interviews with the U.S. Geological Survey and metals traders have provided excellent information on the minerals supply chain and estimated pricing along the chain. Although the gold trade is more difficult to track because of much more extensive smuggling, the Pole Institute and Pact have provided useful research on this which we use as a basis here. Recognizing the possible variations in percentages for several of the variables, we provide a range of estimates for the profits—high, medium, and low.

Appendix 2: Armed Groups' Estimated Profits from trade in Tin, Tantalum, Tungsten and Gold - 2008

	Amount (kgs)	Price	Ore content	Marginal revenue	% for armed groups - high	% for armed groups - avg	% for armed groups - low	% ctrld by armed groups - high[11]	% ctrld by armed groups - avg	% ctrld by armed groups - low	Total-high[5]	Total-avg	Total-low
Tin N Kivu	**Amt[1]**	**Price[2]**	**Ore Content[3]**	**MR[4]**									
Mine	18412000	$22.20	65%	4.8[6]	0.9[7]	0.8	0.7	0.85[8]			$43,945,761.60	$39,062,899.20	$34,180,036.80
Transport	18412000	$22.20	65%	8.5[9]	0.7[10]	0.6	0.5	0.85			$60,527,148.50	$51,880,413.00	$43,233,677.50
Total											$104,472,910.10	$90,943,312.20	$77,413,714.30
Tin S Kivu													
Mine	6180000	$22.20	65%	4.8[12]	0.9	0.8	0.7	0.75	0.666	0.5	$13,015,080.00	$10,273,236.48	$6,748,560.00
Transport	6180000	$22.20	65%	8.5	0.7	0.6	0.5	0.75	0.666	0.5	$17,925,862.50	$13,644,142.20	$8,536,125.00
Total											$30,940,942.50	$23,917,378.68	$15,284,685.00
Total tin revenue											$135,413,852.60	$114,860,690.88	$92,698,399.30
Tantalum N Kivu	**Amt[13]**	**Price[14]**	**Ore Content[15]**	**MR[16]**				**% ctrld...high[20]**					
Mine	82000	$81.57	30%	17.9[17]	0.9[18]	0.8	0.7	0.85			$1,122,867.00	$998,104.00	$873,341.00
Transport	82000	$81.57	30%	31	0.7[19]	0.6	0.5	0.85			$1,512,490.00	$1,296,420.00	$1,080,350.00
Total											$2,635,357.00	$2,294,524.00	$1,953,691.00
Tantalum S Kivu													
Mine	435000	$81.57	30%	17.9	0.9[21]	0.8	0.7	0.75	0.666	0.5	$5,255,887.50	$4,148,647.20	$2,725,275.00
Transport	435000	$81.57	30%	31	0.7	0.6	0.5	0.75	0.666	0.5	$7,079,625.00	$5,388,606.00	$3,371,250.00
Total											$12,335,512.50	$9,537,253.20	$6,096,525.00
Total tantalum revenue											$14,970,869.50	$11,831,777.20	$8,050,216.00
Tungsten N Kivu	**Amt[22]**	**Price[23]**	**Ore Content[24]**	**MR[25]**									
Mine	800000	$21	60%	4.6	0.9[26]	0.8	0.7	0.75	0.66666	0.5	$2,484,000.00	$1,962,647.04	$1,288,000.00
Transport	800000	$21	60%	8	0.7[27]	0.6	0.5	0.75	0.66666	0.5	$3,360,000.00	$2,559,974.40	$1,600,000.00
Total											$5,844,000.00	$4,522,621.44	$2,888,000.00
Tungsten S Kivu								**% ctrld...high[28]**					
Mine	500000[29]	$21	60%	4.8	0.9	0.8	0.7	0.75	0.666	0.5	$1,620,000.00	$1,278,720.00	$840,000.00
Transport	500000	$21	60%	8	0.7	0.6	0.5	0.75	0.666	0.5	$2,100,000.00	$1,598,400.00	$1,000,000.00
Total											$3,720,000.00	$2,877,120.00	$1,840,000.00
Total tungsten revenue											$9,564,000.00	$7,399,741.44	$4,728,000.00
Gold N Kivu	**Amt[30]**	**Price[31]**	**Ore Content[32]**	**MR[33]**				**% ctrld...high[34]**					
Mine	1500	$29,000	98%	6400	0.9[35]	0.8	0.7	0.75	0.666	0.5	$6,480,000.00	$5,114,880.00	$3,360,000.00
Transport	1500	$29,000	98%	11000	0.7	0.6	0.5	0.75	0.666	0.5	$8,662,500.00	$6,593,400.00	$4,125,000.00
Total											$15,142,500.00	$11,708,280.00	$7,485,000.00
Gold S Kivu													
Mine	5000	$29,000	98%	6400	0.9	0.8	0.7	0.75	0.666	0.5	$21,600,000.00	$17,049,600.00	$11,200,000.00
Transport	5000	$29,000	98%	11000	0.7	0.6	0.5	0.75	0.666	0.5	$28,875,000.00	$21,978,000.00	$13,750,000.00
Total											$50,475,000.00	$39,027,600.00	$24,950,000.00
Total gold revenue											$65,617,500.00	$50,735,880.00	$32,435,000.00
Combined Total											$225,566,222.10	$184,828,089.52	$137,911,615.30

Appendix 2 Endnotes

1 These figures are based on officially reported figures from the Division of Mines of the DRC Government (DM), plus an estimate 35% rate of under-declaration by the official agencies. The DM reports 12,502,000 kgs for North Kivu and 4,196,000 kgs for South Kivu for the first 11 months of 2008. The figures of 18,412,000 and 6,180,000 factor in one additional month and the 35% under-declaration rate. The 35% under-declaration rate is based on several sources. INICA estimates that underdeclaration for natural resource exports is between 30-35%. Furthermore, the under-declaration of tin from Bisie, N Kivu's largest mine, was over 40% in 2006 and 2007. Bisie's official capacity is 10,600,000 kgs per year, and the official Congolese authority DGM Kilambo witnessed 10.309,000 kgs as leaving the Bisie-Walikale mining area for Goma, yet DM sources report 44% lower numbers. The reasons for this fraud are described in detail in the Pole Institute report. For 2007, Garrett cites 12,754.56 tons from N Kivu, based on six plane-loads per day carrying two tons each leaving the Walikale mining area for Goma, and a further 4,115 tons arriving in from Goma from other areas of N Kivu. The Polé Institute, and then Bates and Sunman based on Polé's research, cite 16,870 tons as a total for both North and South Kivu for 2006. The 2007 official export figures from the Congolese Ministry of Mines are 10,175.2 for N Kivu and 4,731 for S Kivu. However, these official figures must be revised, taking into account that it is 65% grade tin, and approximately 44% was non-declared by customs, according to Garrett. That would make for 17,363 tons total. Bates estimates a higher rate of under-declaration by customs officials for 2006, approximately 67%. However, interviews on the ground reveal that data collection has improved somewhat, and hence we use a more conservative under-declaration figure of 35%. Nicholas Garrett and Harrison Mitchell, "Trading Conflict for Development", DFID, April 2009; Nicholas Garrett, "Artisanal Cassiterite Mining and Trade in North Kivu: Implications for Poverty Reduction and Security", CASM, June 2008; Aloys Tegera and Dominic Johnson, "Rules for Sale: Formal and Informal Cross-border trade in Eastern DRC", Polé Institute, June 2007, pp. 52-4. Nick Bates and Hilary Sunman, "Trading for Peace: Achieving security and poverty reduction through trade in natural resources in the Great Lakes area", DFID/USAID/Comesa, October 2007; Official export data for the DRC Ministry of Mines, 2007; Interviews with U.S. Geological Survey specialists in tin, Central Africa, and tantalum, February 2009; interview with Resource Consulting Services, February 2009.

2 All prices here are derived from world metals prices, taking into account the lower amounts obtained by traders in Congo. We do not use the prices reported by DRC government agencies or the Private Sector Foundation, S Kivu, which are known to be greatly under-reported, as analysed by Tegera and Johnson. $22.20 is the price for a kg of tin in USD. This and all metals prices in this document are for June 2008 and are from the metals industry publication Metals Bulletin. The tin price is for 99.85% pure tin, hence one must multiply it by 60% to reach the price of the cassiterite ore that is 60% tin when it leaves eastern Congo. The table for metals prices is available from the German Federal Institute for Geosciences and Natural Resources (BGR) at http://www.bgr.bund.de/ Tegera and Johnson, "Rules for Sale".

3 This is a conservative estimate. The cassiterite is approximately 50-55% tin ore content when at the mine in eastern Congo, but is processed at the comptoirs and generally leaves eastern Congo at an average of 65% tin content. We take the average - 60% - to incorporate the cassiterite which is exported from the mines and sold to buyers at 55% grade. Garrett, "Artisanal Cassiterite Mining"; interview with mining expert, February 2009.

4 This represents two figures: 1) the marginal revenue that armed groups are earning from controlling a percentage of the mines; and 2) the money earned from illicitly taxing the transport of the minerals. See each figure for more details.

5 This also factors in a 10% loss in material when processing by comptoirs. Tegera and Johnson, "Rules for Sale."

6 The average price that cassiterite (tin) ore is sold for at the mine is approximately 35% of the price of when it leaves Congo. In 2007, this was approximately $3, and updating for June 2008 prices, this was $4.8. Garrett, "Walikale", p. 44; Interview with international metals specialist, February 2009.

7 This is an estimated percentage of what the armed groups earn at the mines which they directly control, once miners and others have been paid. The marginal revenue after paying miners ranges from 92.2% to 97.4%, based on reported wages of $1-5 per day. However, we use more conservative estimates for the profits of armed groups of 80-90%, seeing as they may have to pay others around the mines. We provide 3 figures – a high, average, and low figure – based on differences in mine locations and mineral finds. According to INICA, there are 1,800 miners in Bisie mine in Walikale, including 1,130, 438, 133, and 31 counted at the four main mine sites of Bisie. The low calculation is thus based on providing miners with $5/day, which averages to $1,825 per miner per year at Bisie. This makes for a total expense for miners at Bisie of $3,285,000. Given that an average of 14,016 tons of cassiterite ore leave Bisie each year at an average price of $3 (making for a total of $42,080,000 of revenue), the high percentage for miners is 7.8%, with the remaining 92.2% going to armed groups. If miners earn the average wage of $2.5/day, their percentage drops to 3.9%, and if they earn $1/day, their percentage is 1.56%. Nicholas Garrett, "Case Study Cassiterite Exploitation and Trade in North Kivu" in Natural Resources and Trade Flows in the Great Lakes Region: Annexes, Initiative for Central Africa (INICA), p. 46.

8 This 85% figure is conservative and could be higher. It is based on the fact that a) Bisie mine accounts for approximately 70% of North Kivu's tin production and is controlled an armed group (until early 2009, the 85th Brigade of the Congolese Army, a non-integrated armed group, and reportedly more recently an ex-CNDP/FARDC unit); and b) the majority of other mines in North Kivu are controlled by either by non-integrated FARDC units, FDLR, Mayi-Mayi. International Peace Information Service (IPIS), "Mapping Conflict Motives in War Areas: Eastern DRC," September 2008. Available at http://www.ipisresearch.be/mapping_kivu.php ; Garrett, "Walikale"; Garrett and Mitchell, "Trading Conflict", p. 19.

9 This is the marginal revenue generated during the transport of the mineral from the mine to the export point from East Africa. The export price is approximately 60% of the world price. There are transport costs borne by petits negociants, negociants, other middlemen, comptoirs, and international metals trading companies. The costs of transport are borne by the various transporters, not the armed groups, but the armed groups take a cut of the transport marginal revenue. Nicholas Garrett, "Walikale", p. 44; interview with Central Africa trader, February 2009.

10 This figure represents the percentage of the revenues that the armed groups take during the transport of the tin ore from mine to export. Three estimates are given here – 50%, 60%, and 70% - representing a range of profits, including illicit taxes paid by each transporting segment along the chain before the minerals leave the region. The UN Group of Experts reports that "The rebel group [FDLR] is also involved in trafficking minerals by road from Walikale and controls the vast majority of territory in the mineral-rich Kahuzi Biega National Park." "Final report of the Group of Experts on the Democratic Republic of the Congo", United Nations Security Council, S/2008/773, p. 20; Interview with minerals trader, February 2, 2009.

11 The UN Group of Experts on the DRC cited in December 2008 that: "The Group estimates that FDLR controls the majority of the principle artisanal mining sites in South Kivu, which are mostly cassiterite, gold and coltan mines." We therefore use low, middle and high percentage estimates to interpret the term "majority" – 50, 66, and 75%. "Final report of the Group of Experts on the Democratic Republic of the Congo", United Nations Security Council, S/2008/773, p. 20.

12 The average price that cassiterite ore is sold for at the mine is approximately 1/3 the price of when it leaves eastern Congo from Goma. For the base period for this study, June 2007, this was $3. Garrett, "Artisanal Cassiterite Mining".

13 The official DM reports 56,000 kgs for N Kivu and 295,000 kgs for S Kivu for the first 11 months of 2008. Factoring in the under-declaration rate of 35%, this makes 517,000 tons for the Kivus total. Garrett and Mitchell, "Trading Conflict", p. 31.

14 This was the world price for 30% grade tantalum in June 2008. The price has remained at this level since then but is speculated to rise because of decreased world supply. German Institute for Geosciences (BGR), April 2009.

15 Estimated tungsten ore content based on interviews with geology and minerals experts, February-March 2009.

16 Based on UN and field researchers' data, we estimate the same percentage for armed groups' take at the tin mines which they control for tantalum, tungsten, and gold. See note 7.

17 With the world market price at $81.57/kg of 30% grade tantalum, the average price for the tantalite ore as it leaves Congo is $49. Based on the tin value chain, the price of the tantalite ore at the mine is an estimated 36% of the price when it leaves East Africa, making $17.9. Interviews with international metals traders and Congo minerals experts, February 2009.

18 See notes for tin above.

19 See note above on percentages of transport controlled by armed groups for tin. Tin and tantalum are often found in similar locations in E Congo.

20 The UN Group of Experts on the DRC cited in December 2008 that: "The Group estimates that FDLR controls the majority of the principle artisanal mining sites in South Kivu, which are mostly cassiterite, gold and coltan mines." We therefore use low, middle and high percentage estimates to interpret the term "majority" – 50, 66, and 75%. "Final report of the Group of Experts on the Democratic Republic of the Congo", United Nations Security Council, S/2008/773, p. 20.

21 With the world market price at $81.57/kg and an average ore content of 30% for the tantalum as it leaves Congo, the average end-price for the tantalum ore as it leaves Congo is $27.19/kg. We use Garrett's calculation based that on average, the price paid at the mine is approximately 1/3 of the final price.

22 These are conservative estimates, with the real figures likely higher. The official DM reports 441,000 kgs for N Kivu and 56,000 kgs for S Kivu for the first 11 months of 2008. Factoring in the under-declaration rate of 35%, this makes 880,000 tons for the Kivus total. However, the DM officially reported 767,000 kgs for N Kivu in 2007, and other government agencies reported even higher figures, meaning that the real amounts could be up to 1,500 tons. Conservatively, we therefore use 800 tons for N Kivu. Garrett and Mitchell, "Trading Conflict", p. 31.

23 This is based on the world price of $165 per MTU (7.93 kgs) of 65% grade tungsten ore in June 2008. This equals which is $20.81/kg of 65% grade tungsten ore. BGR, June 2008.

24 Estimated wolframite ore content from the point of export from Congo. Wolframite is approximately 1.5% ore content at the point of extraction, but is refined to approximately 60%. Interviews with geology and minerals experts, February-March 2009.

25 This is based on 60% price for exports leaving Congo ($12.65), and the price at the mine being approximately 36% of the export price.

26 See note for tin above.

27 See note above on percentages of transport controlled by armed groups for tin. Tin and tantalum are often found in similar locations in E Congo.

28 The UN Group of Experts on the DRC cited in December 2008 that: "The Group estimates that FDLR controls the majority of the principle artisanal mining sites in South Kivu, which are mostly cassiterite, gold and coltan mines." We therefore use low, middle and high percentage estimates to interpret the term "majority" – 50, 66, and 75%. "Final report of the Group of Experts on the Democratic Republic of the Congo", United Nations Security Council, S/2008/773, p. 20.

29 The official DM figure of 157 tons for the first 11 months of 2008 is unrealistically low, given past official production of over 500 tons in past years and its reported growth in recent years. We therefore give a conservative estimate of 500 tons.

30 These figures are estimates based on several sources. PACT, based on the UN Group of Experts' estimates, assesses that N Kivu produces 1.5 tons of gold per year. Bates and Sunman, who in a major report for DFID based on Pole's research, estimated gold export from South Kivu to be around 5,000 kgs. Bates and Sunman, "Trading For Peace"; Pact: Natural Resource Trade Flows - DFID/USAID/COMESA Study - June 2007, pp. 35-6: Tegera and Johnson, "Rules for Sale", pp 75-8.

31 See www.goldprice.org We use the June 2008 price here.

32 This is estimated on the conservative side, with the upper range being 99%. Interview with USGS, March 2009.

33 This figure is based Congolese exporters obtaining approximately 60% of the end value of 99.997% purity gold. With a price of $29,000 per kg and 60% value, price at the mine would be $6400 and an approximate export price of $17,400. Interview with gold industry expert, February 2009.

34 Based on the latest UN and other research data that highlight a majority of gold mines being controlled by armed groups in the Kivus, we give three estimates here - 50, 66, and 75%. The UN Group of Experts states that "In North Kivu, FDLR controls many gold-mining pits based in the jungle west of the town of Lubero." PACT further states that "This road [between Lubero and Butembo] is extremely insecure and many of the mines are controlled by the FDLR. "Final report of the Group of Experts on the Democratic Republic of the Congo", United Nations Security Council, S/2008/773, p. 20. Pact: Natural Resource Trade Flows - DFID/USAID/COMESA Study - June 2007, pp. 35-6.

35 Fahey estimates that gold miners earn between $40-60/month ($1.3-$2/day), while PACT estimates that gold miners get $1-2/day, and up to 10% of the final price of the gold as it leaves eastern Congo. Dan Fahey, "Le Fleuve D'or: The Production And Trade Of Gold From Mongbwalu, DRC", L'Afrique des Grands Lacs Annuaire 2007-2008, p. 10; Pact: Natural Resource Trade Flows - DFID/USAID/COMESA Study - June 2007, p. 33.

Endnotes

1 For our analysis of the joint Rwanda/Congo operations see "Congo's Dangerous Crossroads," January 30, 2000; for information on the recent deal between the CNDP and the Congolese government, see Enough's forthcoming report. For recommendations on removing the FDLR from eastern Congo, see Rebecca Feeley and Colin Thomas-Jensen, "Past Due: Remove the FDLR from Eastern Congo," Enough Strategy Paper, June 2008.

2 Daniel Magnowski, "Tin price spike shows Congo's growing origin role," Reuters, October 30, 2008, available at http://www.reuters.com/article/latestCrisis/idUSLU661455.

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4 Nicholas Garrett, "Artisanal Cassiterite Mining and Trade in North Kivu: Implications for Poverty Reduction and Security," Communities and Small Scale Mining, June 2008.

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34 For a much more detailed description of such a process, see Nicholas Garrett and Harrison Mitchell, "Trading Conflict for Development: Utilising the Trade in Minerals from Eastern DR Congo for Development," Resources Consulting Service LLC, April 2009.

35 Learn more about the GEMAP at http://www.gemapliberia.org/.

36 Tin production in DRC has been lower in previous years (likely closer to 20,000 tons in 2007) but the real figure could be higher due to misreporting by DRC government agencies. Similarly, the world tin production for 2008 ranges from 330,000 to 350,000 tons. We therefore use a range of 6-8 percent

37 These figures are based on officially reported figures from the Division of Mines of the DRC Government, or DM, plus an estimated 35 percent rate of underdeclaration by the official agencies.
The DM reports 12,502,000 kilograms for North Kivu and 4,196,000 kgs for South Kivu for the first 11 months of 2008. The figures of 18,412,000 and 6,180,000 factor in one additional month and the 35 percent underdeclaration rate. The 35 percent underdeclaration rate is based on several sources. INICA estimates that underdeclaration for natural resource exports is between 30-135 percent. Furthermore, the underdeclaration of tin from Bisie, North Kivu's largest mine, was over 40 percent in 2006 and 2007. Bisie's official capacity is 10,600,000 kgs per year, and the official Congolese authority DGM Kilambo witnessed 10,309,000 kgs as leaving the Bisie-Walikale mining area for Goma, yet DM sources report 44 percent lower numbers.
The reasons for this fraud are described in detail in the Pole Institute report. For 2007, Garrett cites 12,754.56 tons from North Kivu based on six plane-loads per day carrying two tons each leaving the Walikale mining area for Goma, and a further 4,115 tons arriving in from Goma from other areas of North Kivu. The Polé Institute, and then Bates and Sunman based on Polé's research, cite 16,870 tons as a total for both North and South Kivu for 2006. The 2007 official export figures from the Congolese Ministry of Mines are 10,175.2 for North Kivu and 4,731 for South Kivu. However, these official figures must be revised, taking into account that it is 65 percent grade tin, and approximately 44 percent was nondeclared by customs, according to Garrett. That would make for 17,363 tons total.
Bates estimates a higher rate of underdeclaration by customs officials for 2006: approximately 67 percent. However, interviews on the ground reveal that data collection has improved somewhat, and hence we use a more conservative underdeclaration figure of 35 percent.
Nicholas Garrett and Harrison Mitchell, "Trading Conflict for Development(DFID, April 2009); Nicholas Garrett, "Artisanal Cassiterite Mining and Trade in North Kivu: Implications for Poverty Reduction and Security" (CASM, June 2008); Aloys Tegera and Dominic Johnson, "Rules for Sale: Formal and Informal Cross-Border Trade in Eastern DRC" (Polé Institute, June 2007), p. 52-54; Nick Bates and Hilary Sunman, "Trading for Peace: Achieving Security and Poverty Reduction Through Trade in Natural Resources in the Great Lakes Area" (DFID/USAID/Comesa, October 2007); Official export data for the DRC Ministry of Mines, 2007; Interviews with U.S. Geological Survey specialists in tin, Central Africa, and tantalum, February 2009; Interview with Resource Consulting Services, February 2009.

38 ITRI, "Review of Tin Use and Recycling for 2007";,The U.S. Geological Survey cites a slightly lower figure of 330,000 tons. U.S. Geological Survey Mineral Commodity Survey for Tin (2009), available at http://www.usgs.gov.

39 This was lower in the mid-2000s—one-third to half of current production—as tantalum production in the DRC was lower due to depressed prices and insecurity at that time. Future percentages could fluctuate from 10-25 percent as well depending on prices, production in other areas of the world such as Australia, and corporate buying patterns.

40 The official DRC Ministry of Mines reports 56,000 kgs for North Kivu and 295,000 kgs for South Kivu for the first 11 months of 2008. Factoring in the underdeclaration rate of 35 percent, this totals 517 tons for the Kivus. At 30 percent ore content, this is 155.1 tons total. Garrett and Mitchell, "Trading Conflict," p. 31.

41 U.S. Geological Survey Mineral Commodity Survey for Tantalum (2009), available at http://www.usgs.gov.

42 These are conservative estimates, with the real figures likely higher. The official DM reports 441,000 kilograms for North Kivu and 56,000 kgs for South Kivu for the first 11 months of 2008. Factoring in the underdeclaration rate of 35 percent, this totals 880,000 tons for the Kivus. However, the DM officially reported 767,000 kgs for North Kivu in 2007, and other government agencies reported even higher figures, meaning that the real amounts could be up to 1,500 tons. Conservatively, we therefore use 800 tons for North Kivu. Garrett and Mitchell, "Trading Conflict," p. 31. -

43 U.S. Geological Survey Mineral Commodity Survey for Tungsten (2009), available at http://www.usgs.gov.

44 These figures are estimates based on several sources. PACT, based on the U.N. Group of Experts' estimates, assesses that North Kivu produces 1.5 tons of gold per year. Bates and Sunman, who in a major report for DFID based on Pole's research, estimated gold export from South Kivu to be around 5,000 kgs. Bates and Sunman, "Trading For Peace"; Pact, "Natural Resource Trade Flows—DFID/USAID/COMESA Study" (June 2007), p.. 35-36: Tegera and Johnson, "Rules for Sale," p. 75-78.

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Enough is a project of the Center for American Progress to end genocide and crimes against humanity. Founded in 2007, Enough focuses on the crises in Sudan, Chad, eastern Congo, northern Uganda, Somalia, and Zimbabwe. Enough's strategy papers and briefings provide sharp field analysis and targeted policy recommendations based on a "3P" crisis response strategy: promoting durable peace, providing civilian protection, and punishing perpetrators of atrocities. Enough works with concerned citizens, advocates, and policy makers to prevent, mitigate, and resolve these crises. To learn more about Enough and what you can do to help, go to www.enoughproject.org.

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