

The path of slavery

From mine to cell phone

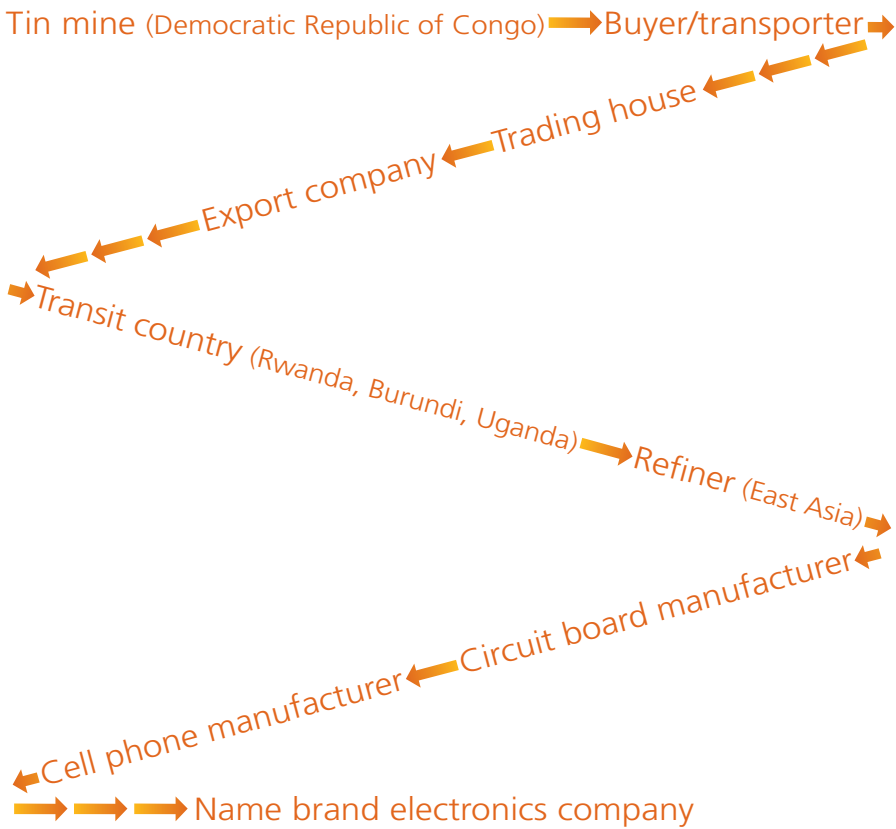
In the Democratic Republic of Congo, miners – including children – are forced to work through the use of rape and violence. The reason for the oppression: the extraction of conflict minerals, essential in the manufacturing of our most common electronic devices, including cell phones.

This chart illustrates how one conflict mineral can find its way into one component of a modern electronic device.



Photo by Sasha Lezhnev for the Enough Project

Children as young as eight have been forced into mining for conflict materials.



Everence

From Mine to Cell Phone

Tin Mine > Buyer-transporter > Trading house > Export company > Transit country (Rwanda, Brundi, Uganda) > Refiner (East Asia) > Circuit board manufacturer > Cell phone manufacturer > Name brand electronics company

Illustrates the way in which one conflict mineral can find its way into one component of a modern electronic device.

A circuit board is one of the main components in a cell phone, along with various other individual sections such as the liquid crystal display (LCD), antennae, microphone, battery, speaker and keyboard.

1) Mine in Eastern Congo

The journey of our conflict mineral begins at a tin mine in eastern Congo. Here, tin ore is collected from the surface and underground with simple hand tools. The mines are filled with child laborers between 10 and 16 years old, as well as others forced to work there.

Most of the major mines in eastern Congo are controlled by armed groups. The soldiers and militants abuse the population and pay workers very poor wages. The average wage for a miner is between \$1-\$5 per day. Armed groups earn up to 90% of the mines profits.

Both the United Nations and IPIS estimate that armed groups and military units control of over 50 percent of the 200 total mines in eastern Congo.

2) Buyer-transporter

From the mines, the tin ore is taken to trading towns and cities in the region by a buyer-transporter on their back, by truck, or by plane. Along the way, the transporter could be stopped by armed groups and forced to pay fees.

Armed groups control much of the transport from the mine to the buying house. They either take a large percentage of the profit from the transporters or transport the minerals themselves.

3) Trading house

The buyer-transporter sells the tin ore to a trading house, which sorts it.

The majority of these traders are paid in advance by the exporters to whom they sell the minerals

4) Export company

An export company then buys the tin ore from the trading house and processes it using machinery, and then sells it to foreign buyers.

The export companies are required to register with the government, and there are currently 17 exporters based in Bukavu and 24 based in Goma. Just as the exporters provide financing to their suppliers, the majority of them are paid in advance for their minerals by international traders from Belgium, Malaysia, and other foreign countries.

5) Transit country

From the exporter the tin is sent by road, boat, or plane to the neighboring countries of Rwanda, Uganda, and Burundi. An international trader completes the tin purchase here.

When minerals are acquired outside of Congo, they are mixed with minerals from other countries. The uncertainty of exactly where the minerals originate allows traders to buy conflict minerals without consequence.

6) Refiner

In order for the tin to be sold in usable form on the world market, it must be smelted into metal by metal refining companies. Tin refining companies are based mainly in East Asia, and take the Congolese tin ore and smelt it with tin from other countries in large furnaces.

Tin is the most lucrative conflict mineral in eastern Congo and last year, 10 main smelting companies processed over 80 percent of the world's tin, almost all of which are based in East Asia.

7) Circuit Board Manufacturer

Once in useable form, the tin metal is purchased on the world market by a component manufacturer, which uses the tin to make a circuit board.

A circuit board is one of the main components in a cell phone.

8) Cell Phone Manufacturer

The circuit board is purchased by a manufacturer which combines it with various other individual sections such as the liquid crystal display (LCD), antennae, microphone, battery, speaker, keyboard, and other components to create a cell phone.

9) Name Brand Electronics Company

After the cell phone is assembled, it is distributed and sold by the name brand electronics company.

For an example, let's look at the Apple iPhone. Apple supplies the software and design – all the components and assembly are done by other companies. Some of the components include:

Software and design: **Apple** – USA

Assembly: **Foxconn, Quanta** – Taiwan

TFT-LCD screen: **Sanyo Epson, Sharp, TMD** – Japan

Video processor chip: **Samsung** – Korea
Touch screen overlay: **Balda** – Germany

The electronics industry is the single largest consumer of the minerals from eastern Congo. The electronics industry is not the only one that uses the 3Ts and gold, but it is the largest. Other industries with a significant stake include tin can manufacturers, industrial tool and light bulb companies for tungsten, and aerospace and defense contractors, as well as the banking and jewelry industries in the case of gold.