

## Science

# The dark, twisted truth about Apple iPhones

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Branded with the iconic slogan “think different,” Apple Inc. certainly does not want its customers to think about where their products come from.

Over the last decade, iPhones have exploded in popularity, causing a massive demand for the rare earth metals used to build the phone. Although this boost has given millions of people the vision to see the world through a different lens, most are blind to the origin story of the devices.

Various metals are contained in a 129 gram iPhone, with a majority of its mass being aluminum and iron, accounting for 38.5% of its mass according to an article published by Motherboard from Vice. Other significant masses include 17.1% copper, cobalt, chromium and nickel, 15.4% of carbon, 6.3% of silicon, 0.67% of lithium and trace amounts of arsenic.

Additionally, rare earth elements such as yttrium and europium are also contained in phones. These elements are typically used to help power the devices, such as operating the screen display or allowing the battery to function.

Due to a spike in demand, the rare earth element mining industry has exploded at the same numbers as iPhones. However, where there is an increase in profit, there is little to no regard for the quality of life for workers who mine these minerals.

An investigation by The Washington Post revealed the harsh conditions of the “copper belt,” a location in the southeastern province of the Democratic Republic of the Congo where 60% of the world’s cobalt is mined. Here, children as young as 6 assist their parents in an attempt to earn \$0.65 after a laborious day, according to an article by The Guardian.

These mines are not like the coal mines of Western Pennsylvania. The cobalt mines consist of several different holes, barely wide enough to fit the individual miner. The miners will rappel down, typically without the protection of safety equipment and attempt to extract as much cobalt as possible, all in an effort to feed their families.

“Every minute is suffused with dread, because many tunnels have collapsed in Kasulo, burying alive everyone inside,” an article by The Guardian said, describing the bleak conditions of the mine.

Afterwards, the mined minerals will be cleaned in the local water supply in order to separate the cobalt from the waste ore. Cleaned by women and young children, the cleaning contaminates the local water supply for the people that rely on it for drinking water.

“Yet while major consumer electronic and automobile brands state they do not tolerate child labour in their supply chains, none have invested enough resources or time into ensuring that they can adequately address the human rights abuses that could be lurking in the products they sell to millions across the world,” The Guardian article read. “They have consistently shifted responsibility for human rights abuses in the Congo onto their Chinese suppliers.”

The suffering caused by iPhone development does not stop there. Across the Atlantic, indigenous people in the salt flats of Argentina are at the mercy of these companies, but in a different way: here, their way of life is in danger.

The Washington Post investigated the salt flats and discovered that water supplies are drastically decreasing to pave the way for lithium mining. In some cases, these plants require potable water to be trucked in, further damaging the local area.

“In visits to all six of the indigenous communities, which lie on a mountain-ringed desert about 25 miles from Argentina’s northwest border with Chile, The Post found a striking contrast — faraway companies profiting from mineral riches while the communities that own the land struggle to pay for sewage systems, drinking water and heat for schools,” an article by The Washington Post read.

The path of suffering does not end in the Congo and Argentina. The Washington Post continued their chain of investigations to China, where minerals are processed in factories. Here, entire towns get covered by lead particles in the air created from factories, contaminating everything in their path.

“By daylight, the particles are visible as a lustrous gray dust that settles on everything,” the article by The Washington Post read. “It stunts the crops it blankets, begrimes laundry hung outside to dry and leaves grit on food. The village’s well water has become undrinkable, too.”

Despite efforts by locals to clean their living spaces, areas contaminated remained that way, with government officials to blame for being complicit with the companies causing this damage.

“Complaints about the pollution are often met with intimidation,” The Washington Post article read. “People living near graphite plants frequently appeared fearful of pressing their grievances.”

Many countries and people have suffered immensely in an effort to provide materials for a commonality in the Western world. As some companies make a push to improve the quality of life for workers, others will bury their heads in the sand and hide behind their bland statements of denial.

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