



mining

EXTRACTION

DISASTERS

BIODIVERSITY

SEVERE ENVIRONMENTAL IMPACTS

GLOBAL

MINING

WATER

extractive industries: blessing or curse?

Environmental impacts of mining

Mining is the process of extracting mineral resources from the earth. These resources include gold, silver, diamonds, copper, platinum, uranium, bauxite and coal. This fact sheet addresses the main environmental impacts of mining.



Local communities looking at the Yanacocha mine in northern Peru. It is one of the biggest gold mines in the world. © sjoerd panhuysen



Freerport mine in Indonesia.



Papua New Guinea's Lihir gold mine. © simon divecha, mpi



Colombia's biodiversity. © terence freitas, project underground

severe impacts

The impacts of mining operations on the environment can be severe:

- The waste, in many cases full of heavy metals and chemicals, can seriously contaminate groundwater and surface water. Especially in developing countries, communities living near mines depend on access to clean fresh water for their basic needs. Toxic spills affect the livelihoods of communities and biodiversity.
- Loss of biodiversity can result from mining in rich ecosystems. For instance, mining in the Okapi Reserve in the Democratic Republic of the Congo – for coltan, used in capacitors for mobile phones and other electronics – has resulted in a massive decline of the gorilla population. In particular open-pit mining may physically destroy large areas of high biodiversity.
- Most mining processes require a tremendous amount of water in order to separate the valuable metals or minerals from the sand or rock. This lowers the water levels, making it harder to access water sources without advanced technical equipment. In Chile, farming communities are fiercely protesting copper and gold mine expansion because of the resulting water shortages.
- Due to the extraction of uranium people may get exposed to unhealthy doses of radioactivity in the process of mining, transporting, use and waste disposal (apart from the obvious risks of nuclear bombs and accidents in nuclear power plants). For instance, NGO-conducted studies have proved that uranium extraction by French giant Areva has resulted in severe potable groundwater radioactive pollution in Niger.

gold mining disasters

Gold mining is notorious for causing environmental disasters. Though other techniques exist, mercury and cyanide are often used to extract gold as these are the cheapest options. Some gold mining companies dump toxic waste tailings directly into rivers or oceans; in other cases accidents are responsible for the release of toxic wastes into water supplies. Disasters are common worldwide, such as:

- In the year 2000 cyanide and other toxic by-products were spilled from the Baia Mare Aurul gold mine in north-western Romania. The poison killed all life in the Tisza, Hungary's second largest river. It was one of Europe's worst river pollution accidents ever.
- In the period 1996-2003 the US-based gold mining company Newmont dumped 2,000 tons daily of mine waste containing mercury into Buyat Bay in the North Sulawesi province of Indonesia. Fish were poisoned and local people experienced health problems ranging from skin ailments, lumps and nervous system complaints. A 2004 study, commissioned by the Indonesian government, showed that the water in Buyat Bay had far too high levels of arsenic and mercury. This sub-marine tailing disposal technique is illegal in the USA, Canada and Australia, but is still used by western companies in many developing countries.

SCALE

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SCALE

closed mines: a time bomb

The environmental threats of a mine do not end when the operations do. Closed and abandoned projects can be an ecological time bomb, as companies and governments have been shown to be reluctant to clean up toxins from the areas, leaving a legacy that may spread into the surrounding environment.

For example, the Philippines has 800 abandoned mines littered throughout the countryside which receive little attention. One of the main environmental problems of abandoned metal and coal mines is acid mine drainage (AMD). AMD or ARD (acid rock drainage) refers to the outflow of acidic water from (usually) abandoned mines.

IMPACTS

Rapu Rapu island

The Australian mining company Lafayette operates a copper and gold mine on Rapu Rapu island in the Philippines. Dutch bank ABN Amro is one of the lead financiers of the project. Two cyanide spills in 2005 caused the death of various marine organisms in nearby creeks. Local fishers couldn't sell their fish for months because consumers feared cyanide and mercury contamination. And, indeed, lab tests revealed the presence of toxic levels of mercury in the livers and flesh of a pygmy whale and a dolphin which had been found dead onshore. The company denied the use of mercury, but hadn't actually analysed whether there was mercury in the ore that it mined. To date Lafayette has no solution to prevent acid mine drainage. According to scientists and mine experts this is one of the largest looming threats to the fragile Rapu Rapu island. In 2006 a fact finding mission, commissioned by the Philippine government, called for better government regulations and monitoring to prevent irresponsibly acting mining companies.

EXAMPLE

the global burden of coal

The burning and mining of coal, mainly to generate electricity, contributes about 20-25 percent to worldwide climate change. In Europe, many new coal-fired electricity plants are planned, speeding up climate change. In most Chinese cities, coal-fired electricity plants and other industries are the main source of air pollutants, causing enormous health problems.

the role of mining industries in developing countries

Mining industry operations may cause serious social and environmental damage to their surroundings. Developing country governments often lack adequate regulations and monitoring capacities to ensure social and environmental well-being.

Governments and companies in developed western countries should realise this and act to guard against this damage. They should make sure mining projects have a social license to operate (including local communities' free, prior and informed consent) and best environmental practices are applied.

Free, prior and informed consent means that an equal and respectful relationship with local communities (included women) is entered into. It starts with respecting the rights of local communities to their lands and resources. 'Free' means that nobody should be forced or manipulated. 'Prior' stands for consultation in advance of planned activities. 'Informed' means that planned activities are fully disclosed in accessible and understandable forms. 'Consent' means approval of planned activities by the community.

DEMANDS

our demands:

- Extractive industries should stop destroying the environment and wrecking people's lives around the world. There should be a ban on any new projects unless free, prior and informed consent of local communities has been fully implemented.
- EU countries, the European Commission and international financial institutions should stop using foreign assistance and other public resources for projects extracting coal and uranium. Private banks and pension funds should stop investing in coal and uranium projects. They all should ban support to any other mining project whenever there has been no free, prior and informed consent of the local communities.

DEMANDS

information resources: www.minesandcommunities.org | www.nodirtygold.org | Walhi (FOE Indonesia):

http://www.walhi.or.id/eng/buyat_team_summary | World Bank, report 'Cost of pollution in China', July 2007. | World Bank, report 'Extractive industries and sustainable development', 2005. | World Watch Institute, report 'State of the world 2003', 2004. | IUCN-CEESP, Alert on mining in the Philippines, 2007. | World Resources Institute, report 'Navigating the numbers', 2005.

RESOURCES



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