

### Section 03. Challenges in Environmental Protection

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## How Does Mining Affect the Environment

Ukraine is a country with mining sector playing important role for international economy. The mining industry of Ukraine is characterized by a high degree of concentration and large scale production, which makes it possible to reduce the cost of mining and the use of perfect equipment. The coal industry of Ukraine among other branches of the fuel and energy complex has the most provided raw material base. How to build a mining enterprise and how does it affect our environment?

Before mining can begin, the land is cleared. The first issue is deforestation. Deforestation immediately destroys wildlife habitats. As the land is cleared and low bushes and vegetation burned and destroyed, wildlife either moves on or dies.

Deforestation affects the nesting habits and migratory patterns of birds, as well as the pollination of flowers and edible plant life. It destroys the homes of valuable insect life as well. The process of turning CO<sub>2</sub> into oxygen cannot take place.

In any eco-system, life is dependent on the whole sum of its parts. When a tree falls in a forest, it is immaterial if someone hears it or not. What is important is that its loss can have an immediate, profound, and very visible effect on the survival of other life in, around, and near it.

It is particularly coal mining that has been proven to have disastrous effects on human health. Miners have been known to suffer and die from the disease Black Lung. What's more, people who live near coal mines have been known to have increased lung cancer rates, respiratory disease, and low birth weights. Similarly, people who live near surface mines face health issues due to the explosives used and the chemicals these release into the air.

Studies have shown that trace metals remain in the soil for a long time ranging from hundreds to thousands of years. Cd, Ni, and Zn have a relatively shorter residence time in the soil than Pb and Cr which may remain for several thousand years. This simply means that it is not easy and cheap to rehabilitate an abandoned mining site. In fact, the physical destruction of the landscape can be irreparable. And more importantly, the health risk of the contaminants that have already entered the food chain can remain for a long time.

Global participation is required to reduce the effects of mining on the environment.

On a fundamental level, recommends several ways to reduce mining's environmental impacts could be recommended:

- Reduce mineral consumption. Over 80 tons of natural resources are required annually per person, including resources from mining. It is anticipated that by 2050 this consumption will rise by a factor of three.

- Improving environmental performance at mines. Mining reportedly erodes more of the Earth's surface each year than natural river erosion. For example, in excess of 220 tons of earth are excavated to produce just one ton of copper.
- In particular abandoned hard rock mine sites can impact on public health and the environment. When mines fill with water, this becomes highly acidic.
- In addition to these measures, renewable energy will inevitably play a key role to reduce the impact of mining on the environment.

It is generally recognized that preventing pollution is more economic and effective at reducing environmental impacts than cleaning it up later on , leaving a legacy of environmental degradation for future generations.

Methods for minimizing and eliminating wastes in the production of minerals and metal commodities include:

- Using cleaner production techniques;
- Environmental control technologies;
- Using waste as raw material;
- Reducing the amount of waste produced through process re-engineering.

The overall pollution caused by the mining is enormous. The water and the soil are the main affected part. The pollution of the water and the soil around the mining area causes the imbalance in the eco-system of that particular area. The huge machines that assist in the mining procedure also cause air pollution as the burning of fossil fuels releases toxic gases in the air.

Mining for fossil fuels such as coal, or even for gems and gold, has always been about the money. Coal mining provides jobs that are steady and command a reasonably decent paycheck in this economy. There are safe practices companies can follow to protect the safety and health of their workers, communities, and the environment.

Their choice to do that must be encouraged as it is one tree in this particular forest that everyone around the world will feel the effects of if it is allowed to fall. It is past time to put the efficiency back into mining coal and other fuel sources in terms of energy efficiency.