



**Environmental
Issues**

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An "environment" is the whole of surrounding things. Surroundings are defined by a central entity. In ecology, environment refers to the surroundings of humankind. Generally, environment refers to the biological, physical and social things on the earth or in inhabitable space outside the earth's atmosphere.

Environmental Issues

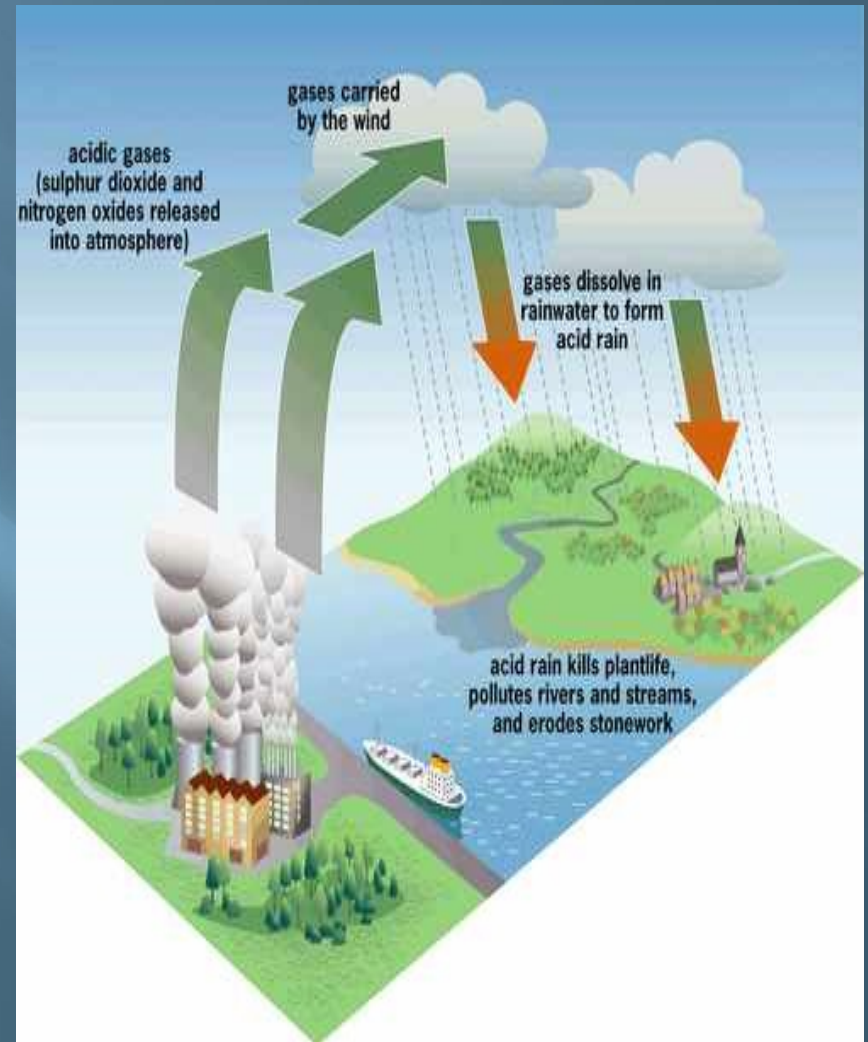
A variety of environmental problems now affect our entire world. As globalization continues and the earth's natural processes transform local problems into international issues, few societies are being left untouched by major environmental problems.

Some of the largest problems now affecting the world are: Acid Rain, Air Pollution, Global Warming, Hazardous Waster, Ozone Depletion, Smog, Water Pollution, Overpopulation, and Rain Forest Destruction.

Acid Rain

The term acid rain refers to what scientists call acid deposition. It is caused by airborne acidic pollutants and has highly destructive results.

Acid rain, one of the most important environmental problems of all, cannot be seen. The invisible gases that cause acid rain usually come from automobiles or coal-burning power plants.



Acid Rain- Causes

The primary causes of acid rain are sulphur dioxide and nitrogen oxides. These chemicals are released by certain industrial processes, and as a result, the more industrialized nations of Europe as well as the US suffer severely from acid rain.

Most sulphur dioxide comes from power plants that use coal as their fuel. These plants emit 100 million tons of sulphur dioxide, 70% of that in the world.

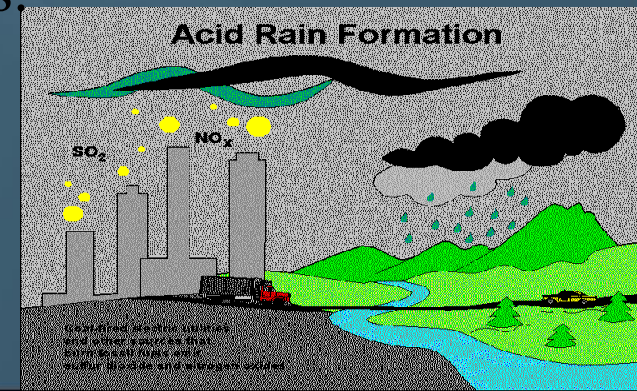
Automobiles produce about half of the world's nitrogen oxide. As the number of automobiles in use increases, so does the amount of acid rain. Power plants that burn fossil fuels also contribute significantly to nitrogen oxide emission.

Though human causes are primarily responsible for acid rain, natural causes exist as well. Fires, volcanic eruptions, bacterial decomposition, and lightening also greatly increase the amount of nitrogen oxide on the planet. However, even the gigantic explosion of Mt. St. Helens released only about what one coal power plant emits in a year.

Once the tiny pollutant molecules have entered the atmosphere, they can travel for

thousands of miles. Eventually, the particles will combine with other compounds to produce new, often harmful, chemicals.

Acid rain comes down to the earth in the form of rain, snow, hail, fog, frost, or dew. Once it reaches the ground, the acidity in the substance can harm and even destroy both natural ecosystems and man-made products, such as car finishes.



ACID RAIN- EFFECTS

Acid rain is having harmful effects both on people and on the natural **ecosystems** of the world. Scientists today are convinced that acid rain is severe in many areas, and that it is having an adverse effect on the environments of those locations.

Acid Rain Affect Aquatic Ecosystem

Many ecosystems are affected by acid rain. Bodies of water, such as lakes and rivers, see many of their inhabitants die off due to rising acidity levels.



Acid Rain Effect on Trees and Plants

Aside from aquatic bodies, acid deposition can significantly impact forests. As acid rain falls on trees, it can make them lose their leaves, damage their bark, and stunt their growth. By damaging these parts of the tree, it makes them vulnerable to disease, extreme weather, and insects. Acid falling on a forest's soil is also harmful because it disrupts soil nutrients, kills microorganisms in the soil, and can sometimes cause a calcium deficiency. Trees at high altitudes are also susceptible to problems induced by acidic cloud cover as the moisture in the clouds blankets them.



Acid Rain Effect on Buildings

Finally, acid deposition also has an impact on architecture and art because of its ability to corrode certain materials. As acid lands on buildings (especially those constructed with limestone) it reacts with minerals in the stones sometimes causing it to disintegrate and wash away. Acid deposition can also corrode modern buildings, cars, railroad tracks, airplanes, steel bridges, and pipes above and below ground.



ACID RAIN -SOLUTIONS

Modern science has proven that acid rain is a dangerous and highly destructive problem. As a result, various ways to limit acid rain have been invented, and some are now being used.

There are many ways that power plant companies like Northern States can reduce acid rain creation. They can use coal with a low sulphur content, they can remove the sulphur from smoke their plants release, and they can limit processes known to generate high levels of acid rain.

Policy makers and environmental experts are now looking into the best methods to limit acid rain.

Environmentalists advocate the installation of sulphur cleaning scrubbers in factories, washing sulphur out of coal, and finding new methods of burning coal. Power plant operators are looking for less expensive solutions to the problem.

Individuals can help by conserving energy or driving their cars less. Governments can pass laws restricting pollution levels, or can use a variety of methods such as tradable emission permits to reduce acid rain. Whatever way it is done, acid rain will certainly have to be limited in the future.

AIR POLLUTION

Every day, the average person inhales about 20,000 liters of air. Every time we breathe, we risk inhaling dangerous chemicals that have found their way into the air.

Air pollution includes all contaminants found in the atmosphere. These dangerous substances can be either in the form of gases or particles.



Air pollution can be found both outdoors and indoors. Pollutants can be trapped inside buildings, causing indoor pollution that lasts for a long time.

The sources of air pollution are both natural and human-based. As one might expect, humans have been

- producing increasing amounts of pollution as time has progressed, and they now account for the majority of pollutants released into the air.



Fundamental Causes of Air Pollution

Industrialization set in motion the widespread use of fossil fuels which are now the main drivers of pollution as we know it.



Population growth causes the demand for food and other goods to go up, which is met by expanded production and use of natural resources. This then leads to higher levels of atmospheric pollution.



Globalization has in a way become a facilitator of air pollution. Big industry takes advantage of lax environmental controls in developing nations and moves its manufacturing facilities to such “pollution havens” from where air pollution travels around the world without any obstacles.



Air Pollution Effects

Of course, atmospheric pollution would not be such a big problem if it weren't for its harmful effects on humans, animals, trees and the wider environment.

We can distinguish between *short-term acute effects* and *long-term chronic effects* of air pollution.

Air pollutants enter the body primarily through the respiratory system which thus becomes their main victim.

Each air pollutant exerts their own specific adverse impacts, ranging from mild to really damaging.

AIR POLLUTION- SOLUTIONS

Air pollution has many disastrous effects that need to be curbed. In order to accomplish this, governments, scientists and environmentalists are using or testing a variety of methods aimed at reducing pollution.

There are two main types of pollution control.

Input control involves preventing a problem before it occurs, or at least limiting the effects the process will produce.

Five major input control methods exist. People may try to restrict population growth use less energy, improve energy efficiency, reduce waste, and move to non-polluting renewable forms of energy production. Also, automobile-produced pollution can be decreased with highly beneficial results.

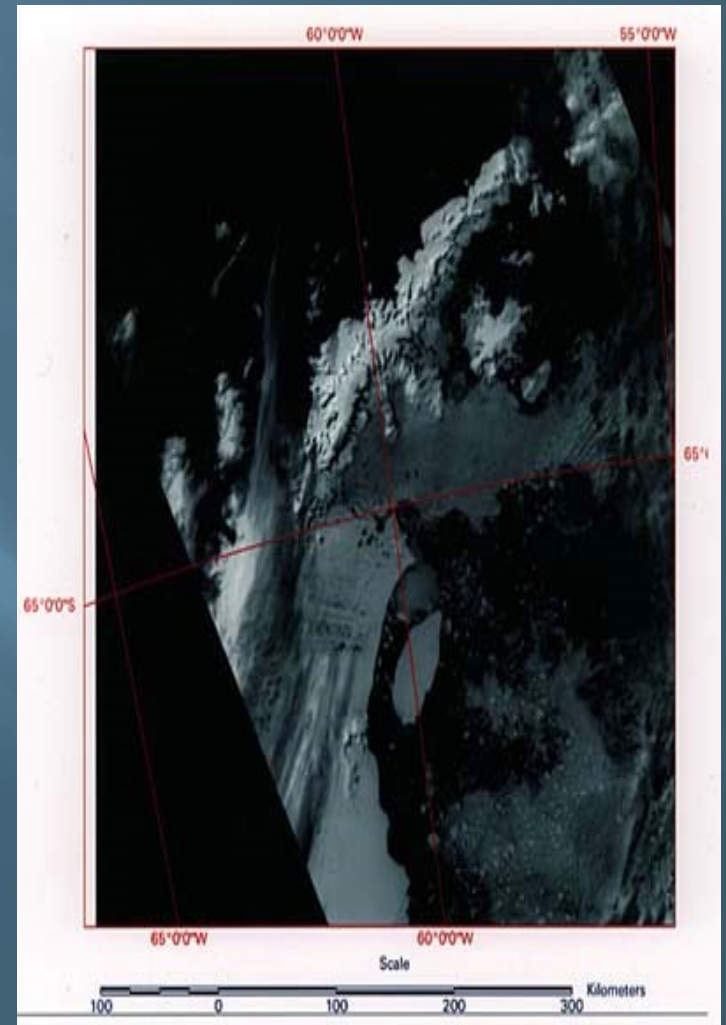
Output control, the opposite method, seeks to fix the problems caused by air pollution. This usually means cleaning up an area that has been damaged by pollution.

Input controls are usually more effective than output controls. Output controls are also more expensive, making them less desirable to tax payers and polluting industries.

Current air pollution control efforts are not all highly effective. In wealthier countries, industries are often able to shift to methods that decrease air pollution. In the United States, for example, air pollution control laws have been successful in stopping air pollution levels from rising. However, in developing countries and even in countries where pollution is strictly regulated, much more needs to be done.

GLOBAL WARMING

- Global warming, also known as the greenhouse effect, immediately received international attention. Scientists, environmentalists, and governments around the world took an interest in the subject.
- Global warming is called the greenhouse effect because the gases that are gathering above the earth make the planet comparable to a greenhouse. By trapping heat near the surface of the earth, the greenhouse effect is warming the planet and threatening the environment.



GLOBAL WARMING-CAUSES

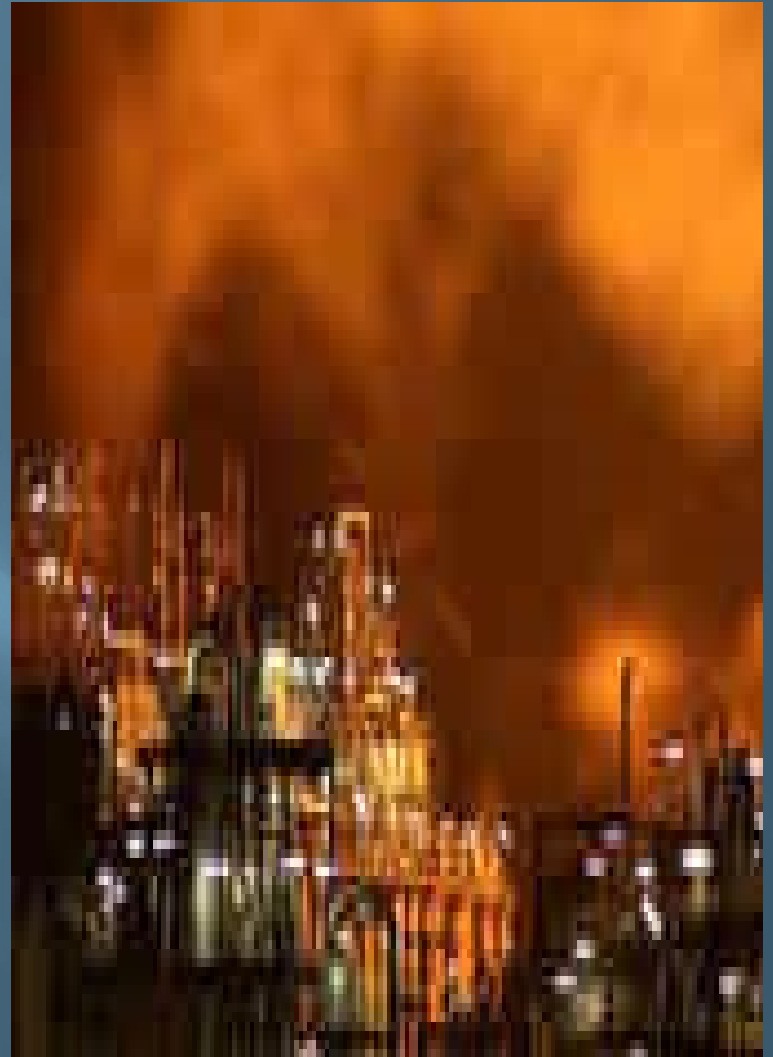
Global warming has a variety of causes. One of the largest factors contributing to global warming is the general problem of overpopulation and its many effects.



- ▣ Many different gases can increase the planet's temperature. The number of different products and human activities that contribute to global warming are so numerous that finding solutions to the problem is very difficult.
- ▣ Using a refrigerator releases dangerous gases, turning on the lights requires energy from a power plant, and driving to work causes gas emissions from the car. Countless other normal activities lead to global warming.



- ▣ Though having an atmosphere is important, the greenhouse effect may be making it excessively thick. The levels of gases covering the Earth have soared with industrialization and developed countries now produce about 75% of greenhouse gases.



What Are The Effects of Global Warming on Earth?

The effects could be enormous. Relative to the hectic pace of your daily life, global warming is a slow-moving problem. But that does not mean you should “wait and see” what happens. If we wait, we may be creating an unsolvable problem, an unstoppable climatic shift that could have devastating impacts in years to come.

▣ The climate changes that will result from global warming are extremely difficult to predict. The weather is determined by so many factors that it is often compared to chaos by scientists. Changing the temperature will likely have some effect on the planet's weather, but just what that effect will be is nearly impossible to predict.



If temperatures do indeed rise significantly, the most important result would be that some portion of the polar icecaps would melt, raising global sea levels.

GLOBAL WARMING-SOLUTIONS

- ▣ The threat of global warming is among the most important of all modern environmental problems. There are a variety of ways of dealing with it, each attempting to combat one of the many causes of global warming.



The problems that cause global warming include overpopulation, deforestation ozone depletion, garbage dumping, and many others. These all have unique solutions which are now being promoted by environmentalists.

- ▣ Certain laws and treaties are aimed at reducing the emission of pollutants that result in global warming. In 1988, the International Conference on the Changing Atmosphere drew scientists and decision makers from 48 countries.
- ▣ Some policies could successfully reduce global warming. Raising fossil fuels, taxing emissions, and encouraging people to take environmentally friendly action through such activities as planting trees will all help.
- ▣ Because many problems leading to global warming are caused or contributed to by overpopulation, people are beginning to work to reduce family sizes. Family planning services actually help in the fight against global warming.

Education is a key method of reducing the greenhouse effect. By teaching people about such things as deforestation, environmental activists hope to prevent the problems that ultimately lead to global warming.

- ▣ Widespread media attention to the global warming problem is also increasing awareness. This is causing both individuals and governments to act more responsibly towards the environment.

- ▣ The rise in sea levels would be disastrous for some places. Islands would disappear, meaning their millions of inhabitants would have to relocate. Flooding would occur along coastlines all over the world, displacing more people and ruining cropland.
- ▣ In the case of major global warming and melted ice caps, some countries might simply cease to exist. Global warming,
 - ▣ if uncontrolled, could
 - ▣ cause a major catastrophe.

RAIN FOREST DESTRUCTION



- ▣ The atmosphere and oceans are not the only parts of the environment being damaged. Rain forests are being quickly destroyed as well, and their survival is questionable.
- ▣ E.O. Wilson, a biologist at Harvard, called the depletion of rain forest areas "the greatest extinction since the end of the age of dinosaurs."

- Unlike some environmental issues, rain forest depletion has fortunately received significant public and media attention.
- Despite the opposition to the cutting down of rain forests, the problem continues. Every year, Brazil chops down an area of forest the size of the state of Nebraska.
- In addition to the Amazon's rain forests, many other forests are being cut down as well. In Indonesia, Zaire, Papua-New

Guinea, Malaysia, Burma, the Philippines, Peru, Colombia, Bolivia, and Venezuela, rain forests that were once great have been lost.



- According to some estimates, 50 million acres of rain forest are cut down every year. The United Nations says the figure is closer to 17 million acres. The World Wildlife Fund says that every minute, 25 to 50 acres are cut or burned to the ground.

- The world's growing population has been a primary cause of rain forest destruction. More people need land to live on and wood products to

consume. Limiting population growth may be the first in a series of steps that would limit the destruction of the rain forests.

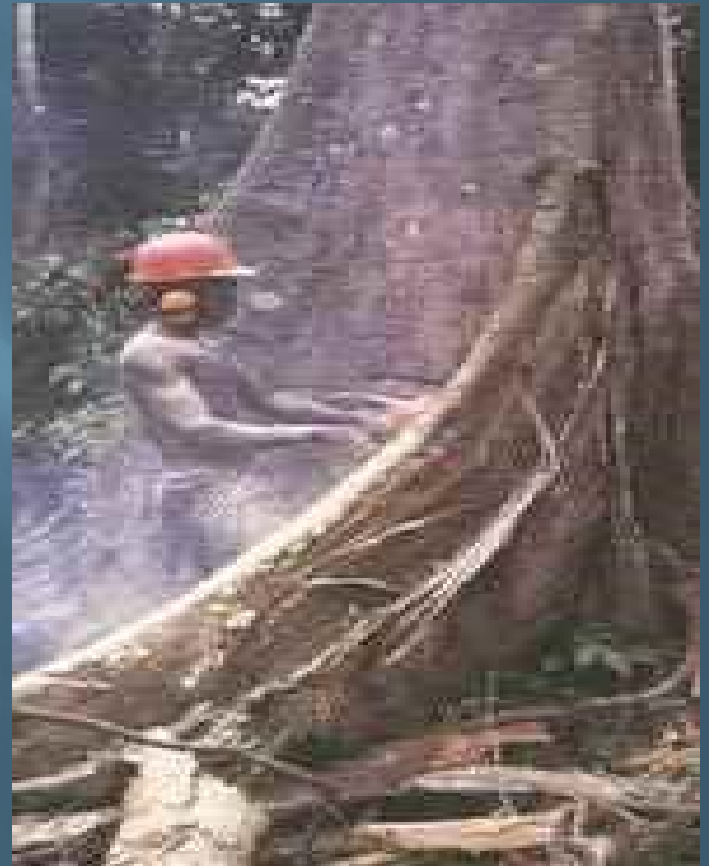


The CAUSES and SOLUTION of RAINFOREST DESTRUCTION

Logging

Commercial logging companies cut down mature trees that have been selected for their timber. The timber trade defends itself by saying that this method of 'selective' logging ensures that the forest regrows naturally and in time, is once again ready for their 'safe' logging practices (WWF).

- ▣ In most cases, this is untrue due to the nature of rainforests and of logging practices.



S o l u t i o n s : For all purposes for which tropical timber is used, other woods or materials could be substituted.

We can stop using tropical timber and urge others to do the same. As long as there is a market for tropical timbers, trees will continue to be cut down. Labeling schemes, aimed at helping consumers to chose environmental friendly timbers, are currently being discussed in many countries.

Agriculture - Shifted Cultivators

'Shifted cultivators' is the term used for people who have moved into rainforest areas and established small-scale farming operations.

These are the landless peasants who have followed roads into already damaged rainforest areas. The additional damage they are causing is extensive. Shifted cultivators are currently being blamed for 60% of tropical forest loss (Colchester & Lohmann)



The reason these people are referred to as 'shifted' cultivators is that most of them people have been forced off their own land. For example, in Guatemala, rainforest land was cleared for coffee and sugar plantations. The indigenous people had their land stolen by government and corporations. They became

- ▣ 'shifted cultivators', moving into rainforest areas of which they had no previous knowledge in order to sustain themselves and their families (Colchester & Lohmann).



S o l u t i o n s : Land reform is essential if this problem is to be addressed. However, according to Colchester and Lohmann, "an enduring shift of power in favour of the peasants" is also needed for such reforms to endure (Colchester & Lohmann).

Agriculture - Cash Crops and Cattle Ranching

Undisturbed and logged rainforest areas are being totally cleared to provide land for food crops, tree plantations or for grazing cattle (Colchester & Lohmann). Much of this produce is exported to rich industrialised countries and in many cases, crops are grown for export while the local populace goes hungry.

Due to the delicate nature of rainforest soil and the destructive nature of present day agricultural practices, the productivity of cash crops grown on rainforest soils declines rapidly after a few years.

Monoculture plantations - those that produce only one species of tree or one type of food - on rainforest soil are examples of non-sustainable agriculture.

S o l u t i o n s :” Reducing the demand for Southern-produced agribusiness crops and alleviating the pressure from externally-financed development projects and assistance is the essential first step” (Colchester and Lohmann).

Fuel wood

The United Nation's Food and Agriculture Organisation estimates that '1.5 billion of the 2 billion people worldwide who rely on fuel wood for cooking and heating are overcutting forests'. This problem is worst in drier regions of the tropics. Solutions will probably involve a return to local peoples' control of the forests they depend on.



Large Dams

The construction of dams not only destroys the forest but often uproots tens of thousands of people, destroying both their land and their culture. The rates of waterborne diseases increase rapidly. Downstream ecosystems are damaged by dams which trap silt, holding back valuable nutrients. Reduced silt leads to coastal erosion.

- ▣ The sheer weight of water in dams has in Chile, Zimbabwe, and Greece led to earthquakes. The irrigation and industrial projects powered by dams lead to further environmental damage. Irrigation leads to salination of soils and industry leads to pollution



Solutions : Aid organisations like the World Bank have traditionally favoured spectacular large-scale irrigation and hydro-electric projects. In all cases when such projects are proposed, there has been massive opposition from local people. Reform of the World Bank and other such organisations, and support for campaigns against large-scale dams is needed.

Mining and Industry

Mining and industrial development lead to direct forest loss due to the clearing of land to establish projects. Indigenous people are displaced. Roads are constructed through previously inaccessible land, opening up the rainforest. Severe water, air and land pollution occurs from mining and industry.



Solutions: Local campaigns against mining and industrial development, and the campaigns to reform the large aid agencies which fund such schemes, should be supported.

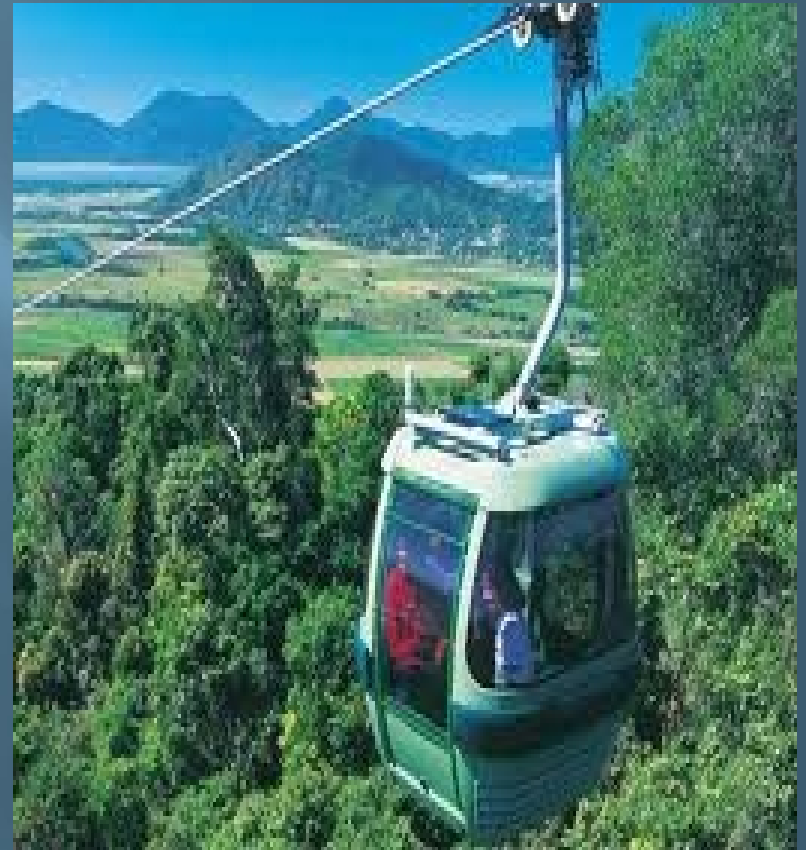
Tourism

The creation of national parks has undoubtedly helped to protect rainforests. Yet, as national parks are open to the public, tourism is damaging some of these areas.

Ecotourism, or environmentally friendly tourism, should educate the tourists to be environmentally aware. It should also be of low impact to its environment.

Unfortunately, many companies and resorts who advertise

themselves as eco tourist establishments are in fact exploiting the environment for profit.



S o l u t i o n s : The rights of indigenous forest dwellers and others who depend on intact forests must be upheld. In instances where there are campaigns opposing specific tourist developments, they should be supported. Genuine ecotourism should be preferred to other tourist enterprises.

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