

Effects of Globalization on China's Environment

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Globalization, Industrialization, and Environmental Pressure

Globalization broadly defines how commerce, technology, trade, transportation, communication, and international investment have increased connections among countries. Through globalization, nations become more dependent on one another for goods, services, labor, raw materials, technology, and markets. In many ways, globalization has created positive change in the world economy. It has promoted exportation and importation, increased employment opportunities, encouraged foreign investment, supported industrial development, and improved the standard of living for many people. China is one of the most important examples of a country that has been deeply transformed by globalization. Over the last few decades, China has developed into one of the largest manufacturing and trading economies in the world. However, globalization has also created serious environmental problems in China, especially in relation to air pollution.

Although globalization has helped China achieve rapid economic growth, it has also increased industrial activity and energy demand. Due to industrialization and higher reliance on fossil fuels, globalization has resulted in negative impacts such as air pollution, especially in China's major cities such as Beijing, Shanghai, Tianjin, and Guangzhou. The connection between globalization and pollution is important because China's economic success has been strongly linked with factories, exports, energy production, transportation, and urban growth. These developments have created jobs and wealth, but they have also increased the release of harmful pollutants into the atmosphere. Hence, this essay focuses on air pollution in Chinese cities due to globalization.

Coal Dependence and Atmospheric Pollution

One key factor contributing to atmospheric pollution in China is the country's high reliance on coal. Coal has played a central role in China's industrial expansion because it is widely available and has historically provided a major source of energy for factories, power plants, and urban development. According to Chen (2020), China is one of the largest consumers of coal globally and has accounted for a very large share of global coal consumption. This reliance on coal has been connected to the country's need to support large-scale manufacturing, electricity generation, and infrastructure development. As globalization increased the demand for Chinese exports, the country required more energy to operate factories and supply international markets.

China extensively invested in coal-fired power plants, which contributed to air pollution by releasing harmful substances such as sulfur dioxide, nitrogen oxides, particulate matter, and carbon emissions. Sulfur dioxide is especially harmful because it contributes to smog, acid rain, and respiratory problems. According to Chen (2020), coal-fired power plants were responsible for a significant portion of China's sulfur dioxide emissions between 2000 and 2015. These emissions affected the quality of air in both urban and industrial regions. Although China has taken steps to reduce sulfur dioxide emissions through pollution-control technology and stricter environmental regulations, coal consumption has continued to remain a major environmental concern.

Export Manufacturing and Urban Environmental Degradation

The relationship between globalization and coal use is also connected to China's role as the "factory of the world." As international companies moved production to China, the demand for electricity and industrial energy increased. Many multinational companies were attracted to China because of its large labor force, lower production costs, developing infrastructure, and access to global trade networks. This helped China become a major exporter of electronics, textiles, machinery, furniture, steel, chemicals, and many other products. However, the rapid expansion of manufacturing required large amounts of energy, and much of that energy came from coal. Therefore, the environmental cost of globalization became visible in the form of polluted air and unhealthy urban environments.

Additionally, the manufacturing sector in China also contributes significantly to air pollution. As a result of the increasing number of foreign companies and export-based industries in China, there has been an increasing rate of manufacturing, which has also increased air pollution (Ye, 2020). Factories and other industrial facilities are major sources of air pollution because they produce particulate matter, nitrogen oxides, sulfur dioxide, volatile organic compounds, and other pollutants. These substances can remain in the air and create smog, especially when combined with traffic emissions and weather conditions that trap pollution over cities.

Manufacturing-related pollution is particularly serious in urban and industrial zones. Many Chinese cities expanded rapidly as workers migrated from rural areas to urban areas for employment. This urban growth created greater demand for housing, transportation, energy, and consumer goods. As cities became larger and more crowded, pollution also became more difficult to control. Vehicles, construction activity, industrial production, and coal-based energy all contributed to poor air quality. In this way, globalization affected China not only through international trade but also through internal migration and urban development.

Public Health and Quality-of-Life Consequences

According to Ye (2020), a large portion of the urban population in China has been exposed to air pollution levels exceeding recommended health standards. This makes China one of the countries most affected by the environmental consequences of rapid industrial growth and globalization. Air pollution in China is often measured through pollutants such as PM_{2.5}, which refers to fine particulate matter that can enter the lungs and bloodstream. These particles are dangerous because they are small enough to penetrate deep into the human body. Long-term exposure to PM_{2.5} is associated with respiratory diseases, heart disease, stroke, lung cancer, and premature death.

Furthermore, China's air pollution has had devastating health effects. Studies on pollution and health have repeatedly shown that air pollution contributes to a large number of premature deaths globally, and China has been one of the countries most affected due to its population size, industrial activity, and past dependence on coal. Air pollution can cause both short-term and long-term health problems. Short-term exposure may lead to coughing, throat irritation, eye irritation, breathing difficulty, and asthma attacks. Long-term exposure can increase the risk of chronic respiratory disease, cardiovascular disease, and cancer. Children, elderly people, factory workers, and people with existing health conditions are especially vulnerable.

The health impact of air pollution also creates economic costs. When people become sick due to polluted air, healthcare spending increases and worker productivity decreases. Families may face financial pressure because of medical treatment, lost income, and long-term illness. In this sense, air pollution is not only an environmental issue but also a social and economic problem. The same globalization that helped China grow economically also created health risks that affected millions of people. This makes the issue more complex because economic development and environmental protection must be balanced.

Another important concern is that air pollution can reduce the quality of life in major cities. In cities like Beijing, heavy smog has sometimes affected visibility, outdoor activity, school schedules, transportation, and daily routines. People may avoid going outside when pollution levels are high. Parents may worry about the health of their children, and workers may suffer from breathing problems. Such conditions show that economic growth alone does not guarantee human well-being. A country may become wealthier through globalization, but if its environment becomes unhealthy, the benefits of development become limited.

Environmental Policy, Renewable Energy, and Implementation Challenges

Globalization has also influenced China's environmental policy. As pollution became a serious national and international concern, China began investing more in renewable energy, electric vehicles,

pollution-control technology, and stricter industrial regulations. The country has expanded solar, wind, hydro, and nuclear energy and has introduced policies to reduce emissions from factories and power plants. These efforts show that globalization can also encourage environmental improvement because international pressure, technological exchange, and global climate commitments push countries to adopt cleaner policies.

However, more still needs to be done. China's large population, heavy industrial base, and continued energy demand make pollution control a difficult task. Even though renewable energy is expanding, coal still remains an important part of China's energy system. This creates a challenge for the country because it must continue supporting economic development while reducing environmental harm. A successful solution requires stronger environmental regulation, cleaner production methods, greater investment in renewable energy, improved public transportation, and better enforcement of pollution-control standards.

Corporate Responsibility and Conclusion

The role of foreign companies should also be considered. Globalization allowed many companies to benefit from production in China, but environmental responsibility should not fall only on the Chinese government. Multinational companies that manufacture products in China also have a responsibility to support clean production, reduce emissions, and follow ethical environmental standards. If companies move production to countries with weaker environmental controls only to reduce costs, globalization becomes harmful. Therefore, responsible globalization must include both economic and environmental accountability.

In conclusion, globalization has brought major economic benefits to China, including industrial growth, increased exports, foreign investment, employment opportunities, and improved living standards. However, it has also contributed to serious environmental problems, especially air pollution in major cities. The high reliance on coal, rapid manufacturing growth, urban expansion, and increased energy demand have all played important roles in worsening air quality. Air pollution has affected human health, reduced quality of life, and created economic costs. Although China has increased renewable energy spending and reduced some pollutants through stronger regulations, more action is still needed. The case of China shows that globalization can promote development, but if it is not managed responsibly, it can also create environmental damage. Sustainable globalization must therefore balance economic progress with clean energy, public health, and environmental protection.

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