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Communism and the Environment

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The interdependence between ecology and socio-economic development is well-known, if not well-practiced. Nevertheless, in Eastern Europe, ecological destruction has reached unprecedented levels. The reasons lie in significant population growth, a heavy concentration of industry, and economic and political mismanagement.

In Western Europe, public policies since the early 1960s have mitigated damages and led to a rehabilitation of the environment, including the return of salmon to the Thames and Rhine rivers. In Eastern Europe, whose nations were under centrally-planned communist or socialist regimes until 1989, trends were in the opposite direction—toward more damaging activities and greater environmental degradation.

Environmental conditions in Eastern Europe at the end of World War II were comparatively good. Except for Bohemia, Silesia, and what later became the German Democratic Republic, industry was not extensively developed. Rural populations and agriculture were predominant.

Allied destruction of heavy industry, especially in southern and western Poland, created a need for reconstruction. Initial development focused on relatively ecologically benign industries, such as agriculture and forestry.

That trend was reversed in 1949, however, when Communist Parties, with the help of the Soviet Union, gained political control throughout the region. Such rule made Marxist ideology supreme; the concepts of man ruling nature and man transforming nature came into sharp relief.

In regard to the environment, this development had two equally significant and deeply harmful impacts. First, in Marxist ideology natural resources are free and have no intrinsic value. Their worth is derived from the application of labor and technology; their sole purpose is to serve, not constrain, humans.

Second, Communist Party priorities in promoting economic development proved detrimental to the environment. The Soviet Union and its allies followed a policy of intense militarization that emphasized heavy industry. As a result, industries such as mining, electric generation, steel mills, and chemical plants gained prominence. Industrial workers were hailed as the "power of the nation" and the engine

that generated its development—a sentiment that echoed the Marxist adulation for the proletariat. Throughout Eastern Europe, agriculture and forestry suffered as communities competed for industrial enterprises that became the centerpiece of the party's 5-year plans.

This strategy not only caused ecological damage, but also encouraged economic inefficiencies. Central authorities in Poland and Czechoslovakia, for example, recognized that, because some areas managed industries well, there was no need to invest in the modernization of their plants. In time, once-efficient industries became obsolete. The environment suffered because manufacturing processes were not updated to improve efficiency or environmental management. Examples of such neglect are found in Silesia, especially in the Sudeten Mountains and the Katowice region, and in northern Bohemia.

No Data/No Problem

One-party rule inhibited the dissemination of information on environmental degradation. By the 1970s, however, ecological conditions had become so bad that it was necessary to circulate information about them in order to devise a strategy to deal with the problems. This information was found mostly in low-circulation scientific publications and focused on questions of human health. Public protests and criticisms were squelched. Although Poland collaborated officially with scientists throughout the world on a range of environmental problems, ecological awareness among Polish citizens was low. In fact, people were told that poor environmental conditions prevailed in capitalistic countries, but at home, in socialist countries, conditions were good.

On the books, environmental laws and regulations were impressive. In the field, however, they were rarely enforced. For example, in the 1970s, Polish authorities conceded that the quality of the nation's drinking water had deteriorated, but instead of addressing the problem, they simply lowered quality standards. The ecological state of the rivers and lakes continued to deteriorate while the government claimed credit for improvement.

Public awareness of environmental degradation became more widespread, however, largely as a result of the emergence of the Independent Trade Union, "Solidarity," which was formed in August 1980. An outpouring of ecological data followed.

Despite government resistance and a reluctance to permit public displays of protest, Solidarity exposed many ecological scandals. The public, which had previously accepted government mistruths about the environment, began to listen to the voices of protest.

In Hungary, similar citizen reactions began to unfold, although they were much less visible and forceful than in Poland. In Czechoslovakia, the first public demonstration took place in the spring of 1989 to protest the persistent smog in the Ore Mountains. In East Germany, opposition was not permitted, although the Evangelical Church led a quiet effort to inform its members about the deteriorating state of the environment. In Bulgaria, actions were few; in Romania, even the hint of protest was met by repression.

Environmental awareness and protest were most visible in Poland. The Polish Ecological Club was launched in 1980. Later, "green parties" emerged from the Nature Protection League and the Polish Society for Tourism and Country Studies. Thus, environmental protection in Poland became a political issue.

Political Action

In the spring of 1989, Poland's communist government organized a round-table discussion on environmental issues. Seated at the table were members of the opposition parties. The ecological situation in Poland had become one of the worst in Europe.

In 1983, the nation's Council of Ministers designated 27 communities with 13 million people—33 percent of the population—as "areas under ecological threat." The decision was based on the emission of dust and gases, untreated sewage, and accumulation of hazardous wastes, among other factors. The

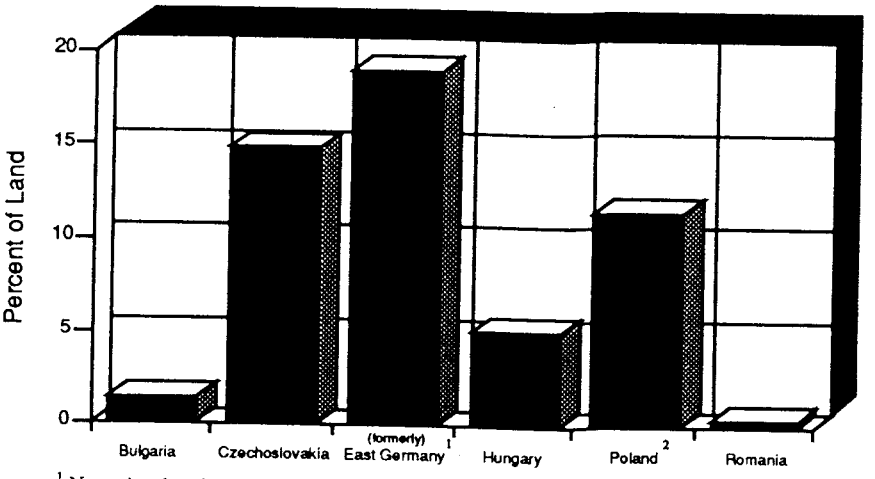
impact on human health was manifold: a shortening of average life expectancy, an increase in infant mortality and miscarriages, and a high incidence of cancer and respiratory diseases such as tuberculosis. Average life expectancy since 1980 has fallen by five years, to below 70.

Despite steps in the 1980s to arrest this deterioration, the situation in Poland has grown worse.[1] In other Eastern European countries, where opposition emerged more slowly and discussions, until recently, have been more muted, the prognosis for progress seems even more uncertain.

The industrial hotspots are well-known: in eastern Germany, they are Halle-Leipzig, Chemnitz-Zwickau, and the Lusatian basin; in Czechoslovakia, northern Bohemia and Ostrava-Karvina Basin; in Hungary, the nation's northwestern sector; in Bulgaria, the western and central regions; and in Romania, the central basin.

For centuries, Eastern European nations have prided themselves on landscape conservation, most notably in the creation of national parks and reserves that now cover significant areas (see Figure 1).[2] But the struggle for conservation did not translate into environmental protection. During the last few decades, even protected areas have suffered environmental degradation. For example, in many of Poland's national parks, lichens have been dying, most likely the victims of air pollution.[3]

FIGURE 1
Parks and Protected Land in Eastern Europe



[1] No national parks.
[2] Mainly landscaped parks.

Environmental problems in Eastern Europe are not confined by national borders. They have spread across the region and beyond.

The former West Germany, for example, protested the lack of pollution controls along the Elbe River, which is heavily polluted as it flows across Czechoslovakia and eastern Germany.

The Odra River, the longest river in western Poland, crosses the Polish border after flowing just 112 kilometers from its headwaters in Czechoslovakia. However, Poland finds the river so polluted that Polish industry cannot degrade it much further. In 1989, the river suffered several big heating-oil spills in Czecholslovakia. Polish damage claims have yet to be satisfied.

A similar transnational problem exists along the Bug River that flows from the Soviet Union into Poland, and the Danube River, which is so large, long, and polluted that it presents a problem for all of Europe. The greatest amount of water pollution, however, is found in Czechoslovakia and Hungary.

Air pollution problems also generate transnational conflict. Forty to 50 percent of the air pollution in Poland come from eastern Germany and Czechoslovakia. However, poor measuring instruments make it difficult to attribute responsibility and devise equitable solutions.

A nation's inability to respond to local or regional concerns only exacerbates international suspicions. In the early 1980s, for example, citizens of Görlitz in then East Germany petitioned their local authorities to reduce the emissions of a local government-owned factory. The town's authorities responded by building a higher chimney, which carried pollutants into the nearby Polish town of Zgorzelec.

More recently, despite Polish protest, Czechoslovakia has decided to build a coking plant at Stonava, only two kilometers from the Polish border. No purifying equipment is planned, so the pollutants will drift onto the Polish Western Beskids Mountains, already threatened by industry in Upper Silesia.

Air Pollution

In Eastern Europe, air pollution is caused principally by:

- Large power plants and foundries that are not equipped with pollution-control devices.
- The limited use of central heating, which causes the extensive use of fireplaces and wood-burning stoves.
- The large number of obsolete and poorly maintained automobiles.
- The low quality of liquid fuel and coal.

Eastern Germany and Czechoslovakia, the region's most industrialized countries, have limited deposits of black coal; therefore, high-sulfur brown coal and lignite are used extensively. Large coal deposits and low mining and processing costs have encouraged Poland to exploit this resource.

During the 1970s, oil imports from the Soviet Union gave Poland and other Eastern-bloc nations an opportunity to limit their use of coal. But since 1980 imports have been curtailed, increasing the exploitation of brown coal and lignite. In Czechoslovakia in 1985, more than 60 percent of the nation's electricity was generated with high-sulfur coal.[4] Czech power production increased from 4,100 million kilowatthours (kwh) in 1937 to 73,000 million kwh in 1981, with 80 percent of that power generated from high-sulfur coal. As a result, the emission of sulfur dioxide is higher in Czechoslovakia than in western Germany, although Germany's industrial output is much higher.

In Poland, low-sulfur coal either is exported or reserved for large industrial users. High-sulfur coal, on the other hand, is commonly used for home heating and cooking. The use of coal in the home is reflected in the following trend: in a cold winter, sulfur dioxide and nitrous oxide emissions are two to three times higher than in a mild winter.[5] During cold winters, national parks near residential areas experience daily readings of 10 to 30 milligrams of sulfur dioxide per square meter and 0.2 to 0.5 milligrams nitrogen oxide per square meter, while during the summer, the readings are only 5 to 10 and 0.05 and 0.18 milligrams respectively. The national parks with the highest readings are in Karkonosze, Ojców, and Wielkopolska.

Detailed data on the emission of air pollutants are limited and often derived from uncalibrated measuring instruments and unreliable networks. Despite these limitations, European scientists agree that only Great Britain and Italy have sulfur dioxide emissions that exceed those of eastern Germany, Czechoslovakia, and Poland. In Czechoslovakia, sulfur dioxide emissions totaled 3.37 million metric tons (MMT) in 1982 and now exceed 4 MMT; in Poland, emissions were 2.5 MMT and are now 5 MMT. In eastern Germany, sulfur dioxide emissions exceed 6 MMT, the highest reading in the world.[6]

In other Eastern European nations, the problem is not as acute; in fact, it is largely limited to great industrial centers and towns. Nevertheless, industrial backwardness and antiquated heating systems have caused all Eastern European nations except Czechoslovakia to be excluded from the "30-percent club." Members of the "30-percent club" agreed in 1980 to reduce sulfur-dioxide emissions by 30 percent by 1993. Sweden and Switzerland have reached this goal, but in Eastern Europe, emissions have increased.[7]

Unleaded petrol is now sold in Poland—but only in about 20 stations. In the meantime, problems intensify as the number of old vehicles grows steadily and incomes stagnate, making the purchase of newer, cleaner-running vehicles more difficult.

Another environmental problem, although usually confined to a locality, is fly ash caused by the burning of low-quality coal and the intensive development of the metallurgical industry. Dead zones, characterized by the complete devastation of the environment, are sometimes found near metals foundries—for example, in Glogów, Legnica,

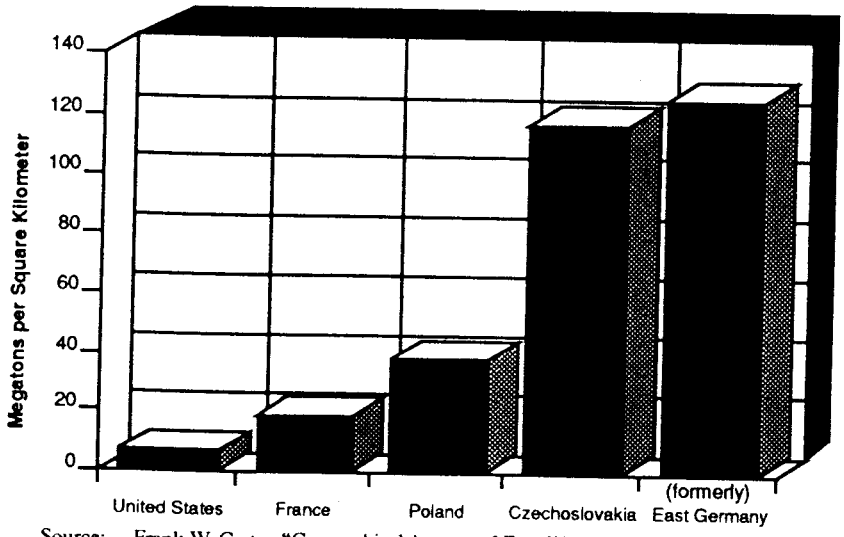
and Skawina in Poland. Overall, fly-ash emission in Eastern Europe is greater than in any other industrialized region in the world (see Figure 2). Air pollution has a direct negative impact on vegetation and an indirect impact through soil contamination. Its effects in Eastern Europe vary, depending on local conditions.[8] Throughout Poland, scientists estimate about 25 percent of the food crop cannot be eaten.

The effects of pollution are most clearly visible in Eastern Europe's forests. On the Polish-Czech border lie the Karkonosze Mountains that embrace two national parks. The parks were cited by the International Union for Conservation of Nature and Natural Resources as two of the world's most threatened protected natural areas. The same ecological threats are present in northern Bohemia.[9] In Czechoslovakia, 25 percent of the trees in national parks have been destroyed and the rest have been badly damaged. Losses due to environmental destruction are estimated to cut 10 to 15 percent from the gross national product from each Eastern European country annually.

Water Pollution

Due to wasteful water use and defective water systems, the average groundwater level in Poland has sunk by almost a meter since 1975. In Czechoslovakia, it is a loss of more than 23 percent of the total water supply.[10]

FIGURE 2
Fly-Ash Production



Source: Frank W. Carter, "Geographical Aspects of East-West Environmental Policy," paper presented at Environmental Policy Cooperation between Eastern and Western European Countries, Firenze, May 28-29, 1990.

Poor water management has polluted much of the remaining water supplies. Most industrial plants lack sewage filters; as a result, the mercury level in the Elbe River is 250 times higher than European Community limits. The Vistula River contributes 34 cubic kilometers of liquid effluent annually and 91 to 400 metric tons of nitrogen—two-thirds of the total amount of nitrogen entering the Baltic.[11] Mine waters from Upper Silesia drain into this river and cause sodium chloride concentrations at Krakow of 9 milligrams per cubic decimeter, comparable to the polluted Baltic.

Careless use of ammonia fertilizers on light soils north of the Sudeten and Carpathian Mountains (51 percent of Polish soil is sandy) enriches the rivers, and air pollution acidifies the surface and groundwaters. Coal pollution due to water drainoff is common in all coal-basins and ionizing pollution occurs near old uranium mines.

The sewage network is small and in bad repair throughout Eastern Europe. In Poland, for example, one-half of the towns (even those as large as Warsaw and Lódz) lack city-wide sewage systems. Nearly one-half of the rivers in each country do not meet minimum water-quality standards. Waterborne pollution decreases the availability of drinking water. Seventy-five percent of the wells on individual farms, for example, have polluted water. Poland's eastern seashore is unfit to swim in; nearly one-third of the Baltic sea is dead; and the Black Sea may be dead by 2000.[12]

The situation has sometimes worsened, paradoxically, because of investments in water management. Reservoirs, especially in Bulgaria and Poland, have slowed water flows and

thus increased sewage concentrations.

What Must Be Done?

First, the countries of Eastern Europe must initiate an energetic program to save their environment. International help is necessary. In Budapest, an ecological center for post-socialist countries is to be built with Western assistance. The Netherlands has constructed a monitoring station in the western Sudeten, and Sweden is to convert its debts into protective investments in Poland. World Conservation Monitoring in Cambridge, United Kingdom, has established an environmental data bank. Such activities are of special interest to the International Union for Conservation of Nature and Natural Resources' East European Program.[13]

What is needed is a comprehensive assistance plan—a "Green Marshall Plan." Eastern European countries cannot solve their problems on their own. Additional assistance from the United Nations is necessary. In Hungary, for example, the United Nations Development Programme is training Hungarian scientists in ecologically sound management that emphasizes the use of non-toxic pesticides, detoxifying industrial fly ash, and monitoring and improving the quality of environmental data collection.[14]

By working together, Eastern Europeans may slowly climb from the ecological pit created by the practices and neglect of the region's postwar Communist regimes.

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NOTES

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