Poland's Progress: Environmental Protection in a Period of Transition

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Poland’s Progress: Environmental Protection in a Period of Transition

DANIEL H. COLE*

I. INTRODUCTION

Poland’s first post-communist government inherited a combined economic and ecological crisis of immense proportions. At the beginning of 1990, it initiated an unprecedented political-economic transformation designed to establish liberal democratic institutions and a market-based economic system. Many expected that these reforms would promote improved environmental protection, e.g., by hardening budget constraints on polluters. But they also feared that free markets could aggravate existing environmental problems and

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* Associate Professor, Indiana University School of Law at Indianapolis. I am grateful to John Clark, Paul Cox, Piotr Gliński, Michael Heise, Jurek Jendrośka, and David Papke for their comments on drafts of this article, and to my research assistant Rafał Ofierski for his excellent work. A draft of this article was presented at the Fifth World Congress of Central and East European Studies in Warsaw, Poland, August 9, 1995. I am grateful to the International Research Exchange Board (IREX) for providing a travel grant for the Congress. In addition, I would like to thank the Indiana University Foundation for providing summer fellowships that made this research possible. The views expressed in this article do not necessarily represent those of the Indiana University Foundation, IREX or any person besides the author.


2. For more on budget constraints in socialist and post-socialist Poland, see infra note 45 and accompanying text.
spawn new ones, if the Polish government did not implement a deliberate and forceful policy of environmental protection.³

Today, a half-decade into the transitions, scholars and journalists are beginning to assess the changes in Poland and the other Central and Eastern European countries. A good deal has been written about the political-economic reforms,⁴ but accounts of environmental restoration and protection efforts have been scarce⁵ and generally inadequate. In 1993, Roger Manser wrote of the “failure” of environmental protection in post-communist Central and Eastern Europe:

In spite of curbing some of the excesses of communism’s pollution economy, the nascent market economy has so far failed to bring fundamental improvements and in the future is likely to reinforce old threats as well as create new ones.⁶

A New York Times columnist similarly concluded, in a 1994 article, that the Central and Eastern European environment has not improved significantly since the fall of communism:

The onset of capitalism has not cleaned the region’s foul air, soil or water . . . . What’s more, capitalism is bringing its own problems—more traffic pollution, less public transportation, more plastic foam, more clashes

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3. See, e.g., NOWICKI, supra note 1, at 173-75; Tomasz Źylicz, Implementing Environmental Policies in Central and Eastern Europe, in POLISH POLICY RESEARCH GROUP, 19 PPRG DISCUSSION PAPERS 11 (1993).


5. For example, at the recent Fifth World Congress of Central and East European Studies held in Warsaw, Poland, publishing companies displayed dozens of titles concerning political and economic reforms, but not one concerning environmental protection.

between environmentalists and the peddlers of consumerism.\textsuperscript{7}

The purpose of this article is to demonstrate that such dour assessments are unwarranted, at least with respect to Poland.\textsuperscript{8} Since 1990, environmental conditions in Poland have improved significantly, and not solely or predominantly as a result of economic recession. Deliberate environmental policies have made a major contribution to pollution reductions and increased conservation. And those policies have been facilitated by systemic reforms—most notably the institution of the rule of law and the imposition of substantially hard budget constraints throughout the private economy. The significant environmental improvements resulting from this combination of improved environmental policies and systemic reforms are structural; they have not been summarily reversed by Poland’s return to economic growth.

This is not to say, however, that Poland’s ecological crisis is over. Certain regions of Poland remain highly polluted, and the Polish government predicts that complete environmental restoration will take 30 years and cost a quarter of a trillion dollars.\textsuperscript{9} As Tomasz Żylicz, Poland’s preeminent environmental economist, has admonished, “there will be no ecological miracle in Poland.”\textsuperscript{10} Nevertheless, the environmental achievements of the past half-decade indicate that Poland’s systemic reforms and environmental policies are moving generally in the right direction, giving Poles reason for


\textsuperscript{9} MINISTRY OF ENVIRONMENTAL PROTECTION, NATURAL RESOURCES AND FORESTRY, \textit{NATIONAL ENVIRONMENTAL POLICY OF POLAND} 12-14 (1991) [hereinafter NEP].

cautious optimism about the future of environmental protection in their country.

II. EVIDENCE OF STRUCTURAL ENVIRONMENTAL IMPROVEMENT

Pollution levels in Poland declined dramatically after the initiation of systemic reforms in January 1990. Table 1 highlights Poland's annual rates of economic growth and pollution emissions from 1990 to 1993 (the last year for which environmental statistics are available). For the three year period as a whole, industrial pollution fell by 40%.\textsuperscript{11} According to some analysts, these reductions were simply a byproduct of Poland's economic recession.\textsuperscript{12} Roger Manser, for one, predicted that a return to economic growth would quickly reverse the emissions declines.\textsuperscript{13} But others maintained that the recession was only one factor, and maybe not even the most important one.\textsuperscript{14} Poland's preeminent environmental economist, Tomasz Żylicz, pointed out that the pollution reductions had to be "due to economic restructuring, and improved enforcement" because they exceeded "what could be explained in terms of GDP decline."\textsuperscript{15} The journalist Eugeniusz Pudlis wrote that the Polish government's "deliberate" environmental policies deserved more credit than the recession for lower pollution levels.\textsuperscript{16} And in a May 1994 interview, Poland's Chief Environmental Protection Inspector, Andrzej Walewski, declared that data collected by the Inspectorate "proves" pollution reductions have

\textsuperscript{11} Pollution Down 40 Percent in Poland, Minister Says, PAP News Wire, June 5, 1994, available in LEXIS, World Library, Allwld File.

\textsuperscript{12} Jerzy Jendrośka & Jerzy Sommer, Environmental Impact Assessment in Polish Law: The Concept, Development, and Perspectives, 14 ENVTL. IMPACT ASSESSMENT REV. 187 (1994) ("The observed improvement of environmental records since 1989 is only a side effect of the recession").

\textsuperscript{13} See, e.g., Manser, supra note 6, at 75.


\textsuperscript{15} Żylicz, supra note 10, at 81 n. 3. Dr. Żylicz's observation is strongly confirmed by the data in Table 1, infra.

\textsuperscript{16} Pudlis, supra note 14.
resulted from "investment in environmental protection, and improved discipline among ecological installation users."\(^{17}\)

Data provided in Table 1 show that Poland's economic recession ended in 1992, when gross national product increased by approximately 2\%, and industrial output was 4\% higher than the previous year. In 1993, the economy grew by 4\% (the highest economic growth rate in all of Europe), and industrial output rose by 7\%. This impressive economic recovery made it possible finally to test the alleged connection between the recession and lower pollution levels.

Table 1. Percentage Change in GDP, Industrial Production and Air Pollution Emissions in Poland, 1990–1993.

<table>
<thead>
<tr>
<th></th>
<th>GDP</th>
<th>Industrial Production</th>
<th>Dust</th>
<th>Carbon Oxides</th>
<th>Nitrogen Oxides</th>
<th>Sulfur Dioxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>-12</td>
<td>-24</td>
<td>-23</td>
<td>-17</td>
<td>-18</td>
<td>-21</td>
</tr>
<tr>
<td>1991</td>
<td>-7</td>
<td>-12</td>
<td>-21</td>
<td>-28</td>
<td>-6</td>
<td>-8</td>
</tr>
<tr>
<td>1992</td>
<td>2</td>
<td>4</td>
<td>-26</td>
<td>-15</td>
<td>0</td>
<td>-10</td>
</tr>
<tr>
<td>1993</td>
<td>4</td>
<td>7</td>
<td>-13</td>
<td>-21</td>
<td>0</td>
<td>-3</td>
</tr>
</tbody>
</table>

Sources: GDP and Industrial Production figures: World Economy Research Institute, Warsaw School of Economics, Poland, International Economic Report 1993/94 34 Table 3, 53 Figure 1 (Jan W. Bossak ed., 1994). Pollution emissions: Główny Urząd Statystyczny, Ochrona Środowiska 1994 23 Table I; Główny Urząd Statystyczny, Ochrona Środowiska 1990 123, Table 4.1. (Figures are rounded to the nearest point.)

Had the recession been the sole or even the predominant cause of reduced emissions, as Roger Manser and others have argued, we logically would have expected to see pollution emissions increasing along with production levels beginning in 1992. But that has not been the case. In 1992, emissions of major air pollutants declined by an average of nearly 15\% from 1991 levels (despite the 4\% hike in production). Interestingly, that was the same percentage emissions

reduction Poland experienced in 1991 (from 1990 levels), when the economy was still shrinking (by 7%). In 1993 (the last year for which pollution statistics are available), the rate of emissions decline slowed for most major air pollutants, but still fell (on average) by more than 9%, while industrial output increased by 7%. Water pollution discharges have also declined. During the recession in 1990 and 1991, discharges in Poland fell by 14% (from 1989 levels); when Poland’s economy started growing again in 1992 and 1993, water pollution continued to decline by 8% (from 1991 levels). In addition, the rate of resource consumption has declined along with the pollution levels. In 1993, industry and consumers used 2.4% less water than in 1992, 19.5% less than in 1989. Meanwhile, according to Tomasz Żylicz, “1990 was the first year after World War II that harvests in Polish forests were down-sized to a sustainable level.”

These statistics rebut the contention that pollution reductions were solely or predominantly tied to Poland’s economic recession. Other factors, most notably Poland’s deliberate environmental policies, have contributed substantially to environmental improvements during the past five years. And those policies have been facilitated by various systemic reforms.

III. ENVIRONMENTAL POLICIES, SYSTEMIC REFORMS AND POLLUTION REDUCTIONS

A. The Roundtable Environmental Protocol

The history of post-communist environmental law and policy in Poland actually began before the Communists gave up power. In April 1989, the Jaruzelski regime concluded the famous “Roundtable Agreements” with the Solidarity opposition. In addition to other

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18. Główny Urząd Statystyczny, Ochrona Środowiska 1990 25 Table 1; Główny Urząd Statystyczny, Ochrona Środowiska 1994 22, Table 1.
remarkable elements, the Agreements included an important Environmental “Protocol,” which called for the appointment of a special commission of legal experts to overhaul Poland’s failed system of environmental regulation by the end of 1990. The Protocol specified, among other mechanisms, six provisions to be included in new comprehensive environmental legislation: (1) freedom of access to environmental information; (2) the right to freely conduct and publish environmental research; (3) the right to sue to protect the environment; (4) the establishment, in each community, of a freely-elected environmental ombudsman authorized to inspect and collect information from local government agencies and polluting enterprises; (5) the annual publication of reports on the state of the environment; and (6) the exclusion of all environmental information from state secret laws.

Most of the specific mandates of the Environmental Protocol have yet to be instituted by statutes or regulations. Nevertheless, the mere inclusion of environmental issues in the historic Roundtable negotiations was an important step toward environmental law and policy reform in Poland.

B. A New Environmental Policy for a New Government

When Solidarity took over from the Communists in September 1989, Tadeusz Mazowiecki, in his first public statement as Prime Minister, discussed the need to transform environmental protection along with the political-economic system. As his government prepared to launch the now famous Balcerowicz program of economic reforms (named for former Deputy Prime Minister and Finance Minister Leszek Balcerowicz), it also began to work on administrative and legislative reforms for environmental protection. Before the end of 1989, all environmental and nature protection

21. Among other things, the Roundtable Agreements re-legalized Solidarity (which was outlawed when the Communists declared Martial Law in 1981), and set a timetable for (semi) free elections. In an important sense, the Roundtable negotiations initiated the transition from single-party rule to democracy.


responsibilities were consolidated in a single new ministry, the Ministry of Environmental Protection, Natural Resources and Forestry, which set about developing a national policy to restore and protect Poland’s environment into the twenty-first century. Its new National Environmental Policy (NEP) was published a year later (November 1990), and received parliamentary approval in May 1991. The NEP was based on fundamental principles of environmental protection, including “sustainable development” and “the polluter pays principle.” It established short-term (three to four year), midterm (three to ten year) and long-term (twenty-five to thirty year) goals to be achieved through a combination of market mechanisms and administrative regulations. The immediate short-term goal was to eliminate environmental hazards posing imminent threats to human health. Over the mid-term, the NEP sought to reverse declining environmental trends by bringing Polish environmental standards up to Western levels. This goal was designed, in part, to satisfy a critical precondition for Poland’s eventual membership in the European Union. The NEP’s long-term (twenty-five to thirty year) goal was to implement sustainable development practices throughout the Polish economy.

C. An Old Law in the New System

While the Environment Ministry was busy preparing its new National Environmental Policy, the Mazowiecki government appointed an independent Environmental Law Reform Committee, as called for in the Environmental Protocol to the 1989 Roundtable Agreements. Its task was to draft comprehensive new environmental legislation. But in early meetings the Committee decided this goal was overly ambitious and perhaps unnecessary; many of Poland’s environmental laws could be sufficiently improved by amendment,
As a consequence of this policy decision, Poland’s 1980 Environmental Protection and Development Act (EPDA) has survived the transition largely intact, though it has been amended seven times (so far) since 1989. The more important of those amendments banned hazardous waste imports, strengthened Poland’s environmental impact assessment procedures for new economic developments, and established an innovative new Environmental Protection Bank (Bank Ochrony Środowiska) to


31. The waste regulations were in response to disclosures that Western countries had started exporting hazardous wastes to Poland. Some observers mistakenly assumed this was a consequence of post-communist reforms designed to institute laissez faire. See, e.g., MANSER, supra note 6, at 101-02. But that is incorrect. Wastes began flowing into Poland at the beginning of 1989, a full year before the Balcerowicz reforms went into effect. It was a direct consequence of the Communist regime’s 1988 Law on Economic Activity, which took effect on January 1, 1989. Dz.U. No. 41, item 325. That law, which really marked the end of socialism in Poland, freed virtually the entire economy, including foreign trade, from central planning and government regulation. Environmental restrictions on waste imports were repealed inadvertently, permitting hazardous wastes to be brought into Poland without any permit requirements or dumping restrictions. Ironically, this Communist reform legislation was as close as Poland ever came to laissez faire.

To its credit, Poland’s parliament quickly responded to reports that hazardous wastes were being imported into Poland. Four months after the 1988 Law on Economic Activity opened the door to the waste trade, the parliament slammed it shut again by amending the 1980 EPDA to ban hazardous waste imports. See Wojciech Radecki, The Polish Prohibition of Waste Import, Address Before the International Conference on Environmental Enforcement (Sept. 22-25, 1992), in I CONFERENCE PROCEEDINGS, INTERNATIONAL CONFERENCE ON ENVIRONMENTAL ENFORCEMENT 503 (1992). Subsequently, in August 1993, Poland’s Minister of Environmental Protection issued a list of 106 categories of hazardous waste and toxic substances that cannot be imported into Poland. See Poland Legislates to Protect Itself Against Hazardous Pesticide Trade, PESTICIDE ACTION NETWORK NORTH AMERICA UPDATES SERVICE, Nov. 24, 1993, available online URL ftp://igc.apc.org:70/00/orgs/panna/panups/text 48.

Poland’s ban on hazardous waste imports is being enforced rigorously. According to published reports by the State Environmental Protection Inspectorate, there were attempts to import 18 million tons of illegal waste into Poland in 1990, but only 60 thousand tons actually reached the country. In 1991, out of 3.7 million tons of waste destined for Poland, none—zero—made it into the country. Żylicz, supra note 20, at 97. In 1992, Polish border guards intercepted 1,332 improper waste shipments from the West. See Steve Coll, Free Market Intensifies Waste Problem: Rich Nations Dumping on Poorer Ones, WASH. POST, Mar. 23, 1994, available in LEXIS, News Library, Currents File. The cited figures do not include undetected wastes smuggled across Polish borders. After all, no ban is perfectly enforceable. The important point is that illegal waste imports are hardly the consequence of the systemic reforms introduced by the Solidarity governments, as some have suggested. See MANSER, supra note 6, at 101-02.
provide low-interest loans for environmental protection projects.\textsuperscript{32} Some have criticized these "piecemeal" reforms, claiming that EPDA, as a relic of the old system, should be replaced by legislation better adapted to the new political-economic climate.\textsuperscript{33} The 1980 law certainly suffers from many deficiencies,\textsuperscript{34} and legislation to completely replace it is again in the works.\textsuperscript{35} But, at least in some respects, the old law is actually better suited to the new system than it was to the old.

Poland's 1980 statute was among the world's earliest environmental laws to rely primarily on market mechanisms—resource use and pollution fees—for environmental protection.\textsuperscript{36} Its various regulatory standards, fees for resource use and pollution emissions, and noncompliance fines today are among the world's highest and most extensive.\textsuperscript{37} The EPDA mandates charges for just about every major economic activity that uses or pollutes any environmental medium, including air pollution emissions, water use and pollution discharges, timber harvesting, waste storage and disposal, use of agricultural lands for non-agricultural purposes, and use of automobiles in areas under special environmental protection, such as the national parks.\textsuperscript{38} This broad application of pollution and resource use fees substantially predated the move toward economic means of environmental protection throughout the rest of the industrialized world.

\textsuperscript{32} For more on Poland's Environmental Protection Bank, see infra notes 99-100 and accompanying text.

\textsuperscript{33} See, e.g., JERZY JENDROŠKA, STATE OF ENVIRONMENTAL LAW: POLAND 21 (1990).

\textsuperscript{34} I have described some of these in Daniel H. Cole, An Outline History of Environmental Law and Administration in Poland, Hastings Int'l & Comp. L. Rev. 297, 338-341 (1995).

\textsuperscript{35} On September 13, 1995, the Environmental Law Group of the Polish Academy of Sciences in Wroclaw convened a conference of international experts as a first step in a new legislative project to replace the 1980 EPDA.

\textsuperscript{36} 1980 Dz. U. No. 3, item 6, titles five (fees) and seven (fines). The EPDA also included provisions for civil and criminal liability (title four) but, in practice, these were of secondary importance. See Cole, supra note 34, at 334-337.

\textsuperscript{37} Accord Victoria P. Summers, Tax Treatment of Pollution Control in the European and Central Asian Economies in Transition and Other Selected Countries, Nov. 1994 Int'l Monetary Fund Fiscal Aff. Dep't 8.

\textsuperscript{38} 1980 EPDA, Dz. U., No. 3, item 6, Art. 86.
In the 1980s, other countries in the West and East were just beginning to experiment with environmental fees. Several countries charged fees for noise generation; some imposed waste production fees; a few charged fees for the right to use or discharge effluents into water; and a couple instituted fees for air pollution emissions. None, however, imposed as many charges, covering as many activities and resources, as did People’s Poland. To this day, for example, the United States exacts no per-unit charges for air pollution emissions within legal limits. Poland’s reliance on pollution charges was unique even among its former Soviet Bloc allies. Hungary’s 1976 Act on the Human Environment, for example, imposed no user or pollution fees of any kind. Nor did Soviet environmental legislation; to the contrary, Soviet land and water laws of the early 1980s continued to mandate the free use of socially-owned natural resources.

39. They included the former West Germany, Japan, the Netherlands, Switzerland, the U.K. and the U.S. See J.B. Opschoor & Hans B. Vos, Economic Instruments for Environmental Protection 34 Table 3.2 (1991). This list, like those in subsequent notes, is not necessarily exhaustive; it is intended only for illustration.

40. They included Australia, Belgium, the Netherlands, and the U.S. See id.

41. They included Australia, France, the former West Germany, Italy and the Netherlands. See id.

42. They included France, Japan and the former Czechoslovakia. See id.; Josef Leden, Legal Regulation of Air Pollution Control, 14 Bull. Czech. L. 64, 67 (1975).


Poland's early and extensive application of pollution and user fees for environmental protection was truly progressive, or it would have been but for the fact that market mechanisms require markets to be effective. The Polish Communists were attempting to stimulate pollution control and conservation with prices in an economic system where prices were essentially meaningless because resources and rewards were allocated according to production levels rather than profit, competitive markets were virtually non-existent, and polluters were insulated from price stimulation by endemic soft budget constraints.\(^4\) Using price incentives to control pollution in the socialist economic system was like using water to put out an electrical fire.

This problem was exacerbated by the Party/state's inherent conflict of interest as environmental regulator and nominal owner of the regulated polluting industries. According to the French jurist Laurent Cohen-Tanugi, government regulation (including environmental regulation) tends to be more effective where the government does not participate directly in the economic risks created by the regulation.\(^46\) Where the regulatory conflict of interest exists, the government is likely to undermine or avoid its own rules, by, among other means, softening budget constraints. That is precisely what happened to environmental regulations in the socialist

\(^{45}\) See Żylicz, supra note 3, at 4. For those who may be unfamiliar with the terminology, the "budget constraint" is a concept developed by the Hungarian economist János Kornai to denote the degree of independence of firms and enterprises in an economy. The budget constraint is said to be "hard" when the survival of firms in the economy depends on their profitability. Firms subject to hard budget constraints cannot expect government subsidies or bail-outs. If they are unprofitable, e.g., because of productive inefficiencies, they will simply go out of business. Budget constraints are said to be "soft", by contrast, where survival in the economy does not depend on efficiency or profits, but political factors. Enterprises subject to soft budget constraints expect and rely on government subsidies for their survival. Consequently, they are relatively oblivious to price stimuli and efficiency considerations.

Relatively (but never perfectly) hard budget constraints are associated with market economies. Soft budget constraints have been shown to be endemic to socialist economies. See, e.g., János Kornai, The Soft Budget Constraint, 39(1) KYKLOS 3 (1986). The post-socialist systemic reforms in Central and Eastern Europe were expressly intended, among other things, to improve economic efficiency throughout their economies by substantially hardening budget constraints.

Poland's Progress: Environmental Protection

In the first place, most environmental charges were too low to deter noncompliance (although, it can be argued, even extremely high prices would not have altered polluting behavior in socialism's sellers' markets). And even when substantial fees and fines were levied, the effect was blunted by government planners, who regularly compensated penalized enterprises with increased budget allocations. In other words, money taken from one pocket was simply replaced in another.\(^\text{47}\)

The systemic transformation to an economy based on private property and free markets, while still incomplete, is ameliorating this problem. The government’s regulatory conflict of interest has been reduced. Today, private firms contribute 56% of Poland's gross national product, produce 38% of industrial output, and account for 60% of national employment.\(^\text{48}\) Budget constraints throughout this growing private economy are substantially hard. Private firms in post-communist Poland operate in competitive markets, where performance determines survival. So they are naturally concerned with controlling costs, including regulatory costs and costs arising from inefficient production. In this circumstance, pollution charges can induce changes in production and pollution patterns, assuming fees are set at levels that alter firms' marginal utility calculus.

According to a recent study, emissions charges for dusts and effluent charges for sewage in nine industrial sectors of the Polish economy now approximate or exceed average abatement costs.\(^\text{49}\) If this is true, it must now be cheaper for firms in those sectors to reduce pollution emissions than to pay the fines.\(^\text{50}\) And, in a policy

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\(^{50}\) Contra Mistewicz, *supra* note 7, at 26 (claiming that an unpublished report by Poland's Supreme Chamber of Control proves that "businesses were much better off paying for polluting the environment rather than preventing it.").
that proves Poland's environmental charges are not simply intended as a source of revenue for the government, environmental penalties may be suspended for polluters who pledge to invest in environmental protection equipment or process changes within five years. If they keep their pledge, the penalty is extinguished; if they do not, the penalty is doubled. 51 So, regulated firms in Poland increasingly find that environmental investments can pay big dividends. For example, a pharmaceutical plant near Warsaw recently invested 60 million (old) złotych to reduce its use of ammonia by more than one-half; this one process change increased annual net profits by about 300 million (old) złotych. 52 A coke-chemical complex in Zabrze implemented a change in its coking gas cooling process at a cost of under 3.5 billion (old) złotych; this investment is expected to pay for itself in energy savings within 10 years. 53 And engineers from the Electro-Mechanical Factory in Leszno designed a method for reducing waste byproducts from chromate treatment; the new method costs 36.5 million (old) złotych to implement, but its pay-back period is only 2.1 months. 54 It is worth stressing that these are voluntary process changes designed to improve profitability, e.g., by reducing production costs and exposure to environmental liability; they were not mandated by the State Environmental Protection Inspectorate or any other government agency. Most importantly, they indicate that price stimuli (under the 1980 EDPA) are effectively internalizing production costs in Poland's new market economy by inducing firms to voluntarily alter their production habits.

The same phenomenon has been observed, to a more limited extent, in agriculture. Although that sector enjoys softer budget constraints than the rest of Poland’s private economy, many agricultural subsidies have been slashed or abolished. For instance, the Polish government no longer underwrites fertilizer and pesticide use. This has hardened the budget constraint on farmers who, between 1988 and 1993, reduced their (over-) use of inorganic fertilizer (NPK) by 63% and pesticides by 66%. This entails obvious environmental benefits to the environment (especially surface water quality) and public health (so long as it does not result in food shortages).

As we might predict, budget constraints for enterprises still owned by the state are softer than for private enterprises; however, they are harder than they used to be. State-owned enterprises that used to avoid fees and fines with ease are now being forced to pay up. From 1990 to 1991, government revenues from pollution and resource use charges increased by a factor of thirteen. By 1993, Poland’s various environmental funds were “annually collecting and spending fifteen to twenty times more in real terms than in 1990.” As a consequence, even the largest, most heavily subsidized state-

56. For calcium-based inorganic fertilizer (CaO), the reduction was a more modest 32%.
57. Percentage reductions are calculated from Główny Urząd Statystyczny, Ochrona Środowiska 1994 54, Tables 18 and 19; and Główny Urząd Statystyczny, Ochrona Środowiska 1989 14, Tables 17 and 18.
58. In fact, production of major crops (grain, potatoes, rape, and sugarbeet) declined by about 15% between 1990 and 1993. However, according to analysts from the World Economy Research Institute at the Warsaw School of Economics, the main factor in declining agricultural production has been declining rates of demand for foodstuffs. See POLAND, INTERNATIONAL ECONOMIC REPORT 1993/94, supra note 55, at 58-60. Of course, the declining rate of demand for foodstuffs would also explain some, but not all, of the reductions in fertilizer and pesticide use.
59. See MANSER, supra note 6, at 117.
owned enterprises have become relatively cost conscious (as compared with the 1980s).

Table 2. Pollution Intensity of Electricity Generation in Poland, 1989–1991 (tons/GWh)

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>1989</th>
<th>1990</th>
<th>1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂</td>
<td>15.1</td>
<td>12.6</td>
<td>12.0</td>
</tr>
<tr>
<td>NOx</td>
<td>3.5</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Dusts</td>
<td>5.5</td>
<td>4.6</td>
<td>3.8</td>
</tr>
</tbody>
</table>


In a recent World Bank-sponsored study of the effects of environmental changes on Poland’s energy industry, a group of economists from the Oskar Lange Academy of Economics in Wrocław concluded that the increased fees have “caused” pollution reductions and increased conservation efforts. The data provided in Table 2 show that between 1989 and 1991, power plants significantly reduced the pollution intensity of their activities, reducing per unit emissions, on average, by 20%. These improvements cannot be explained by economic recession because they are not tied to production levels. Rather, the Wrocław researchers concluded that the reductions were due to the heightened cost consciousness of power plant managers resulting from increased emissions charges, higher per unit energy costs, and hardened budget constraints.

So, as Stanisław Wajda and Jerzy Sommer recently concluded, Poland’s environmental fees and fines have finally become “what they should be—a heavy burden for polluters.” Further proof of this comes from the political battle that took place in 1992, when the Ministry of Environmental Protection announced dramatic fee

61. CZAJA ET AL, supra note 49, at 47.

62. Stanisław Wajda & Jerzy Sommer, Environmental Liability in Property Transfer in Poland, in ENVIRONMENTAL LIABILITY AND PRIVATIZATION IN CENTRAL AND EASTERN EUROPE 179, 190 (Gretta Goldenman et al. eds., 1994).
increases for air pollution emissions (as shown in Table 3, infra).  

Affected enterprises—mostly state-owned dinosaurs—exerted their residual political muscle to roll-back the charges, and in late 1992 the Environment Ministry caved in to their demands, slashing pollution fees up to 90%. Fortunately that was not the end of the story. Polish environmentalists predictably were outraged. More surprisingly, their protests were joined by private firms, and even some state-owned enterprises (such as the Jaworzno III power plant) that had already invested heavily in environmental improvements; the fee reductions greatly devalued those investments, while rewarding enterprises that had done nothing to reduce their pollution emissions. Together, this collection of strange bedfellows persuaded the Council of Ministers to reverse the Environment Ministry and reinstate the higher fees (as shown in Table 3). The fact that this fight took place at all, let alone its outcome (the environmental side prevailed), indicates how much budget constraints have hardened since 1989, at least for many economic actors.

63. 1991 Dz.U. No. 125, item 558.


65. See Zechenter, supra note 7, at 121.

Table 3. Changes in Emissions Fees for Selected Air Pollutants (Złotys/kg and approximate US$ values).

<table>
<thead>
<tr>
<th>Date of Imposition</th>
<th>Lead</th>
<th>Sulfur Dioxide</th>
<th>Benzene</th>
<th>Fluorine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 1, 1991</td>
<td>36,000</td>
<td>680 ($0.07)</td>
<td>1,800</td>
<td>3,600</td>
</tr>
<tr>
<td></td>
<td>($3.79)</td>
<td></td>
<td>($0.19)</td>
<td>($0.38)</td>
</tr>
<tr>
<td>Jan. 1, 1992</td>
<td>500,000</td>
<td>1,100 ($0.08)</td>
<td>1,000,000</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>($38.46)</td>
<td></td>
<td>($76.92)</td>
<td>($0.23)</td>
</tr>
<tr>
<td>Oct. 1992 (retroactive to Jan. 1, 1992)</td>
<td>50,000</td>
<td>770 ($0.05)</td>
<td>100,000</td>
<td>2,100</td>
</tr>
<tr>
<td></td>
<td>($3.85)</td>
<td></td>
<td>($7.69)</td>
<td>($0.16)</td>
</tr>
<tr>
<td>Jan. 1, 1993</td>
<td>500,000</td>
<td>1,100 ($0.07)</td>
<td>1,000,000</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>($31.25)</td>
<td></td>
<td>($62.50)</td>
<td>($0.19)</td>
</tr>
</tbody>
</table>

Source: MANSER, supra note 6, at 94 Table 5.6. (Prices are denominated in old złotych.)

In addition to the higher fees for resource use and emissions within legal limits, fines have also increased for violations of environmental standards. The data in Table 4 show that between 1990 and 1993 the collection of noncompliance fines in Poland increased by a factor of twelve, despite an equally dramatic decline in the ratio of collected to assessed penalties during the same period. The majority of uncollected fines are owed by the financially strapped (state-owned) mining sector, which in 1991 alone racked up environmental penalties amounting to four trillion złotych (approximately 300 million 1991 U.S. Dollars). The Ministry of Industry, under pressure from mining concerns, attempted to have the charges rescinded, but the Ministry of Environmental Protection refused. The fines have become a debt owed by the mines to the Polish government. However, the current restructuring plan for the mining industry calls for a substantial reduction in accumulated debts,

69. Id.
including unpaid pollution charges.\(^7^0\) As such, it is another manifestation of persistent soft budget constraints in the state-owned economy. Ultimately, the only reliable solution to that problem is privatization.


<table>
<thead>
<tr>
<th>Year</th>
<th>Collected Fines (billions of złotych)</th>
<th>Percentage of Assessed, but Uncollected Fines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>17.9</td>
<td>32</td>
</tr>
<tr>
<td>1991</td>
<td>95.0</td>
<td>59</td>
</tr>
<tr>
<td>1992</td>
<td>140.7</td>
<td>78</td>
</tr>
<tr>
<td>1993</td>
<td>215.4</td>
<td>84</td>
</tr>
</tbody>
</table>

Source: Główny Urzad Statystyczny, Ochrona Środowiska 1994, 379 Table 21.

D. Environmental Liability and Privatization: Work in Progress

While the hardening of budget constraints in Poland’s growing private economy has facilitated improved environmental protection, privatization of Poland’s mammoth, pollution-belching state enterprises has proceeded at a snail’s pace, plagued by financial scandals and political/ideological debates over the state’s proper role in the economy. Scholars and environmentalists have criticized the Privatization Ministry for disregarding environmental issues (e.g., responsibility for cleaning-up contaminated sites) in privatization transactions.\(^7^1\) Since 1992, however, a process for introducing

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71. See, e.g., Iza Kruszewska, Open Borders, Broken Promises: Privatization and Foreign Investment: Protecting the Environment Through Contractual Clauses (1993); Manser, supra note 6, at 78; Wojciech Stodulski & Grażyna Starczewska, Ownership Transformations in Industry vs. Environmental Protection, in Institute for Sustainable Development, 3 Report (1993); Ruth Greenspan Bell, Capital Privatization and the Management of Environmental Liability Issues in Poland, 48 Bus. Law. 943 (1993);
environmental considerations into the privatization process has been evolving within the Polish administration.

The Privatization Ministry initially addressed environmental protection issues only when potential Western buyers raised them, and then on an ad hoc basis; there was no state or ministerial policy. In fact, the Privatization Ministry had (and has) no legal authority to conduct environmental audits or allocate environmental liabilities. However, in May 1992, that Ministry agreed with the Environmental Protection Ministry to establish an Interministerial Environment Unit (IEU) responsible for developing policies to resolve environmental issues in privatization. Since its inception, the IEU has had a substantially positive impact on the resolution of environmental issues arising in privatization transactions. According to Susan Cummings, an American attorney who has worked for Poland’s Privatization Ministry and has served on the Interministerial Environment Unit, the IEU has improved communications between the Privatization Ministry and the Environmental Protection Ministry, developed a consistent policy with respect to environmental issues in privatization, and introduced innovative procedures for resolving those issues (including the creation of contractual clauses providing for conditional indemnification from liability, cost-sharing between investor and state, etc.). In addition, the IEU has helped to educate the Privatization Ministry on environmental issues, increasing its

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72. See The privatization law, 1990 Dz.U. No. 51, item 298 (as amended).

awareness and ability to (economically) account for environmental problems in privatization transactions.\footnote{44}{Cummings, \textit{supra} note 73, at 605-608.}

Despite these process improvements, we might argue that the Polish government should have foreseen the environmental implications of privatization at the outset of the systemic transition; certainly some issues and controversies might have been avoided. But it is important to bear in mind that there was no pre-existing blueprint for Poland’s political-economic transformation; no country has ever before attempted such a broad privatization of the means of production. We should not be surprised or overly dismayed by the Polish government’s failure to foresee every issue, no matter how significant. It is more important that the government has recognized and responded effectively to problems as they have arisen; that is how the reform process evolves and progresses.

The Polish government’s response to environmental protection concerns in privatization has been “pragmatic.”\footnote{55}{Id.} Some environmentalists would prefer a more radical approach. Roger Manser, for one, has called for the imposition of retroactive environmental liability on investors purchasing state properties.\footnote{66}{See \textit{MANSER, \textit{supra} note 6, ch. 6.}} He correctly notes that this is, in fact, a legal requirement in many Central and Eastern European countries.\footnote{77}{Id. at 105.} Article 55 of Poland’s 1964 Civil Code, for example, automatically transfers liabilities with ownership (in the absence of contrary stipulations).\footnote{88}{1964 Dz.U. No. 19, item 93.} This made sense in the socialist system, where enterprises were administrative agencies of the Party/state, and “ownership” transfers were usually incidents of administrative reforms. In every case, the “buyers” and “sellers” were both agents of the same principal, the Party/state.\footnote{99}{I am grateful to Jurek Jendroška for instructing me on the nature of liability transfers in People’s Poland.} However, in Poland’s new political-economic system, it would be fundamentally unjust to automatically transfer environmental

\footnote{44}{Cummings, \textit{supra} note 73, at 605-608.}
\footnote{55}{\textit{Id.}}
\footnote{66}{See \textit{MANSER, \textit{supra} note 6, ch. 6.}}
\footnote{77}{\textit{Id.} at 105.}
\footnote{88}{1964 Dz.U. No. 19, item 93.}
\footnote{99}{I am grateful to Jurek Jendroška for instructing me on the nature of liability transfers in People’s Poland.}
liabilities to buyers in privatization because they are completely unrelated to the previous "owners" who caused the contamination. More than unjust, it would be pointless. The practical effect would be to discourage potential buyers of state-owned properties, and the entire privatization process could simply grind to a halt. That would be disastrous for environmental protection in Poland, where private firms, subject to hard budget constraints, are leading the environmental and economic recovery. Indeed, the largest threat to continued environmental improvements in post-communist Poland may well be the perpetuation of large and inefficient state-owned (including so-called "commercialized") enterprises, which are subject to governmental conflicts of interest and soft budget constraints.

E. Investing in Environmental Protection

Environmental spending in Poland has greatly increased over the past half-decade, financed primarily by the increased collections of environmental fees and fines. Table 5, infra, shows that Poland’s rate of investment in environmental protection throughout the 1970s and ‘80s was closely tied to economic performance. When Poland’s economy stagnated or declined (as it did through much of the decade), environmental projects were always among the first budget items cut. Socio-economic planners considered them expendable luxuries, and most Polish citizens agreed that in tough times the country could not afford expensive environmental protection. In accordance with this perception, the rate of investment in environmental protection closely tracked the economic growth rate. But in 1987 the pattern changed. That year the economy began to decline again, but the rate of environmental investment continued to increase as a percentage of Gross National Product. We can only

80. Accord James Boyd, The Allocation of Environmental Liabilities in Central and Eastern Europe, in POLLUTION ABATEMENT STRATEGIES IN CENTRAL AND EASTERN EUROPE 61, 65 (Michael A. Toman ed.) (1994) ("Because former governments and managers of cooperatives are most to blame for existing pollution, there is little ethical justification for the new owners of privatized properties to be liable for the past sins of others.").

81. See supra notes 48-54 and accompanying text.

82. Accord CZAJA, supra note 49, at 42 (asserting that the acceleration of privatization in the electric power industry should contribute to environmental protection) and 44 (asserting that the lack of energy conservation efforts in the electric power industry is due to their continued state ownership).
speculate about the reasons for this change in environmental investment policy, but it may have been precipitated by economic studies from the mid-1980s suggesting that environmental investments were not a luxury, but a critical (economic) necessity. In 1985, Professor Antoni Symonowicz calculated the reasonably attainable losses attributable to resource waste and pollution impacts on public health, architecture, industrial equipment, agricultural produce and forests. In 1980, he concluded, resource waste and pollution cost Poland approximately 206 billion złotych. In 1983, another study put the cost of pollution and resource waste at 500 to 600 billion złotych, or 7–9% of national income. A 1985 study by economists from Kraków’s Academy of Economics estimated nationwide ecological losses at 2,216 billion złotych, more than 25% of national income. Costs were even higher for the more highly polluted regions of the country. In Kraków, for instance, ecological damages in 1985 amounted to between 34 and 35% of net production. The authors rightly concluded that the economic costs of ecological damage constituted “a final argument for active environmental protection.” Nevertheless, before the end of communism, spending on environmental protection never reached 1% of Gross National Product.


86. Józefa Familiec et. al., Economic Losses Due to Environmental Pollution in Poland and the Kraków Region, in ENVIRONMENTAL AND ECONOMIC ASPECTS OF INDUSTRIAL DEVELOPMENT IN POLAND 43, 50 (Kazimierz Górka ed., 1991).

87. Id.

<table>
<thead>
<tr>
<th>Economic Growth Rate (%)</th>
<th>Environmental Investment as % of GNP</th>
<th>as % of Total Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976 4.1</td>
<td>0.4</td>
<td>1.2</td>
</tr>
<tr>
<td>1977 2.8</td>
<td>.45</td>
<td>1.4</td>
</tr>
<tr>
<td>1978 3.7</td>
<td>.38</td>
<td>1.3</td>
</tr>
<tr>
<td>1979 -1.0</td>
<td>.35</td>
<td>1.2</td>
</tr>
<tr>
<td>1980 -2.6</td>
<td>.28</td>
<td>1.0</td>
</tr>
<tr>
<td>1981 -5.3</td>
<td>.20</td>
<td>1.2</td>
</tr>
<tr>
<td>1982 -0.6</td>
<td>.25</td>
<td>1.4</td>
</tr>
<tr>
<td>1983 4.6</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>1984 3.4</td>
<td>0.5</td>
<td>2.5</td>
</tr>
<tr>
<td>1985 1.1</td>
<td>.54</td>
<td>2.8</td>
</tr>
<tr>
<td>1986 2.8</td>
<td>.74</td>
<td>2.9</td>
</tr>
<tr>
<td>1987 -2.4</td>
<td>0.8</td>
<td>3.5</td>
</tr>
<tr>
<td>1988 1.6</td>
<td>0.8</td>
<td>3.5</td>
</tr>
<tr>
<td>1989 -1.0</td>
<td>0.8</td>
<td>2.9</td>
</tr>
<tr>
<td>1990 -11.6</td>
<td>0.7</td>
<td>3.7</td>
</tr>
<tr>
<td>1991 -7.0</td>
<td>1.1</td>
<td>5.4</td>
</tr>
<tr>
<td>1992 1.9</td>
<td>1.3</td>
<td>6.5</td>
</tr>
<tr>
<td>1993 4.0</td>
<td>1.3</td>
<td>6.4</td>
</tr>
</tbody>
</table>


Within two years after the first Solidarity government took power, Poland’s environmental protection budget doubled. In 1991, Poland spent 1.1% of GNP on environmental protection. This marked the first time that Poland ever “reached a relative level of environmental investment effort commensurate with what is spent per unit of GDP in the OECD countries [i.e., countries belonging to the Organization for Economic Cooperation and Development].”\(^{88}\) And it was an especially remarkable achievement considering Poland’s deep economic recession—in most countries, during periods of

\(^{88}\) Żylicz, supra note 20, at 98.
declining (real) per capita income, expenditures on "quality of life" concerns such as environmental protection remain stagnant or fall.\textsuperscript{89}

Poland's increased environmental protection budget provided direct funding for badly needed environmental improvements, especially sewage treatment plants. In 1989, 44% of Poland's cities—including its two largest, Warsaw and Łódź, with a combined population of 2.5 million—were without operational sewage treatment facilities; 100% of their municipal wastes were dumped completely untreated into surface waters. Between 1989 and 1991, 866 new sewage treatment plants were put into operation, increasing daily national treatment capacity by 2,467,000 cubic meters.\textsuperscript{90} As a result, the percentage of treated waste increased from 62 to 70% in the four year period from 1988 to 1991. Meanwhile, the amount of municipal and industrial wastewater requiring treatment decreased by 700 million tons.\textsuperscript{91} In nominal terms, this meant that Poland dumped 130 million fewer tons of untreated sewage into surface waters in 1991 than in 1988. As more wastewater treatment plants come into existence, further improvements are expected. In 1993, 341 more sewage treatment plants were completed,\textsuperscript{92} and hundreds of new plants currently are under construction throughout Poland.\textsuperscript{93}

The Ministry of Environmental Protection also has contributed funds from the environmental protection budget to install advanced pollution control technologies at Poland's two biggest air polluters, the Belchatów and Turów coal-fired power plants. As a result of these investments, sulfur dioxide emissions from the two plants are expected to be cut by 90%.\textsuperscript{94}


\textsuperscript{90} Zylicz, supra note 20, at 100 Table 4.

\textsuperscript{91} Id. at 101 Table 6.


\textsuperscript{94} Pudlis, supra note 14.
Poland’s environmental protection budget also supports several independent financial institutions for public and private environmental projects, including the National Fund for Environmental Protection (supported by collected environmental charges), the Eco-Fund (supported by a debt-for-nature swap arrangement with Poland’s sovereign Paris Club creditors), and an Environmental Protection Bank (Bank Ochrony Środowiska) that provides low-interest loans for environmental improvement projects. At their founding, each of these institutions was unique, the first of its kind in the world.

Poland’s parliament created the National Fund for Environmental Protection in Articles 87 and 88 of the 1980 Environmental Protection and Development Act (EPDA). The Fund receives 40% of collected environmental fees and fines, which it invests in public environmental projects. In 1992, it invested a total of 12 trillion złotych (about $880 million U.S.), or 40% of all environmental investments in Poland. Among its various investments, the National Fund has financed projects near Nowy Targ and Pyrzyce to tap geothermal water deposits “large enough to heat a third of the country;” currently the Fund is financing the production of unleaded gasoline at the Gdańsk petrochemical enterprise.

The Eco-Fund (Eko-Fundusz) was established in 1991, pursuant to Poland’s debt reduction agreement with the Paris Club of sovereign creditors. At the time, Poland owed the Club’s seventeen member countries approximately $30 billion (U.S.), and the debt reduction agreement signed in April 1991 called for a net debt reduction of 50%. On top of that agreement, Poland’s Prime Minister (at the time) Jan Krzysztof Bielecki proposed a long-term

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97. Id.
Poland’s Progress: Environmental Protection

If Paris Club members would forgive an additional 10% of Poland’s debt, the Polish government would invest an equivalent amount into an internationally managed Eco-Fund to finance environmental projects with international significance, e.g., projects to protect the Baltic Sea, preserve biological diversity, and reduce emissions of greenhouse gases and other transboundary air pollutants. This deal, if fully adopted, could yield an additional $3 billion for environmental projects in Poland over eighteen years, while significantly reducing Poland’s foreign debt. So far, however, only the United States, Switzerland, France and Italy have agreed to participate in the Eco-Fund, bringing its total base operating budget to approximately $450 million. In its first year of operation, the Eco-Fund contributed 145 billion złotych or about $6.5 million (1993 U.S. dollars) to eighteen projects, including sewage treatment plants, air pollution control equipment, forest preservation, and national parks.  

Poland’s Environmental Protection Bank is the first bank in the world with a primary mission to make preferential loans to ecological projects. The idea originated in the 1989 Roundtable Agreements, and the bank was chartered by parliamentary amendment to the 1980 EPDA. The bank’s founder, organizer and main shareholder is the National Fund for Environmental Protection, which earmarks a percentage of its earnings from collected environmental fees and fines to subsidize the bank’s low interest loans. Loans provided by the bank have been used, among other purposes, to build sewage treatment plants (e.g., near Warsaw, Bydgoszcz and Płock) and convert factories from electric to natural gas heating. Most impressively, the Environmental Protection Bank happens to be one of the most secure financial institutions in Poland today. In 1992, it earned a gross profit of 85 billion złotych (over $6 million 1992 U.S. dollars), and ranked third in capital holdings among Poland’s private


and cooperative banks. It now has ten branch offices throughout Poland.

F. Competition and Technological Innovation in the New Buyers' Markets

Poland's market reforms have provided long-awaited outlets for pent-up consumer demand. Between 1989 and 1992 (i.e., during Poland's deep economic recession) consumer sales increased by 5.8% (after adjusting for inflation); the number of cars on Polish roads increased dramatically, and demand for gasoline remained constant despite steeply rising prices. By 1992, Poland had more television sets per 1,000 inhabitants than Italy, Portugal, Ireland or Greece. Between the late 1980s and 1993, the number of tenants living in each Warsaw apartment fell by 50%.

For Poland's environmentalists, this evidence of burgeoning consumerism is reason for grave concern. Certainly some concern is legitimate. Consumerism does create ecological threats, but it can also bring substantial benefits for environmental protection in Poland.

Consumer preferences drive production patterns. As consumers specify preferences for goods and services, production shifts away from more environmentally stressful heavy industrial production. This trend is already evident in post-communist Poland. According to the World Economy Research Institute at Warsaw University, the 7% rise in industrial output Poland experienced in 1993 was "chiefly a matter of consumer demand." Retail sales that year increased by 11% in real terms. The lion's share of the growth was in the


101. Waclaw Wilczyński, Misleading Statistics, Polish News Bull., June 22, 1993, available in LEXIS, World Library, Alldwld File. It is worth noting that Professor Wilczyński uses these (and other) statistics to debunk the myth that the Balcerowicz program was responsible for "pauperizing" Polish society.


104. Id. at 83.
manufacturing, light industry and food processing sectors. By contrast, output was stagnant in metallurgy and actually declined in the mining and energy sectors.\textsuperscript{105} It is also interesting to note that virtually all of the growth in industrial production was recorded in Poland’s private economy, which grew (in value terms) by a whopping 39\% in 1993. Meanwhile, industrial output in the public sector actually continued to fall (in value terms) by 6\%.\textsuperscript{106} There can be little question that these consumer driven changes away from heavy industrial production have been good news for the Polish environment.

In addition, consumerism is impelling environmentally beneficial technological innovation, as the fight for market-share in competitive markets leads firms to improve quality and reduce costs, \textit{e.g.}, by increasing factor productivity (increasing the productive output from each input unit of labor, capital and natural resources). The result is a steady shift towards greater conservation of resources in production. This phenomenon has been observed in virtually all capitalist economies, but it evidently does not occur in socialist economies because they lack competitive markets, scarcity pricing for resource inputs, and sufficient intellectual property rights.\textsuperscript{107}

The former Soviet Bloc countries lagged decades behind the West in technological development, including the development of technology for environmental protection.\textsuperscript{108} For example, Polish environmental protection inspectors used to rely on hand-held ambient air quality monitors that were not uniformly calibrated\textsuperscript{109} and vastly inferior to western monitoring equipment. Today, Poland is bridging the technology gap with foreign technology transfers and domestic innovations. Poland’s environmental inspectors now utilize

\begin{thebibliography}{99}
\bibitem{105} \textit{Id.} at 56, table 3.
\bibitem{106} \textit{Id.} at 128.
\bibitem{107} See generally Cole, supra note 89.
\bibitem{108} See, \textit{e.g.}, D.J. Peterson, \textit{Troubled Lands: The Legacy of Soviet Environmental Destruction} 47 (1993) (noting that Soviet pollution control technologies for the chemicals industry were “at least twenty years behind world standards”; and while American air pollution scrubbers removed 85\% of sulfur from emissions, the best Soviet scrubbers removed only 10\%).
\end{thebibliography}
monitoring and laboratory equipment that meet European Union standards.\textsuperscript{110} And it is not too wild an exaggeration to say that, in the past half-decade, Polish scientists have come up with almost as many technological innovations for environmental protection—including new coal cleaning technologies, a new alcohol-based gasoline, and a new nuclear-based emissions reduction technology\textsuperscript{111}—as in forty–plus years of socialism.

G. \textit{Improved Environmental Law Enforcement in Post-Communist Poland}

In the first part of the transition period (from 1990 to 1992) Poland’s parliament, the \textit{Sejm}, was quite active in the field of environmental protection. In addition to amending Poland’s 1980 Environmental Protection and Development Act, it has enacted and amended a number of other important environment-related statutes. In 1991 alone, the \textit{Sejm} enacted a new preservation-oriented nature protection law,\textsuperscript{112} a maritime administration law with oil spill prevention and clean-up provisions,\textsuperscript{113} amendments to the forest protection law that mandated ecologically sustainable forest management,\textsuperscript{114} and new enabling legislation for the State Environmental Protection Inspectorate.\textsuperscript{115} The Inspectorate law, in

\begin{itemize}
  \item \textsuperscript{110} See Pudlis, \textit{supra} note 17.
  \item \textsuperscript{112} 1991 Dz. U. No. 114, item 492. See my discussion of the 1991 Nature Protection Act in \textit{An Outline History of Environmental Law and Administration in Poland}, \textit{supra} note 34, at 354-55.
  \item \textsuperscript{113} 1991 Dz.U. No. 16, item 73; \textit{see also} \textit{New Maritime Law Provides for Damages for Oil Pollution}, PAP News Wire, Mar. 18, 1991, available in LEXIS, World Library, Allwld File.
  \item \textsuperscript{114} 1991 Dz.U. No. 101, item 404.
  \item \textsuperscript{115} 1991 Dz.U. No. 77, item 335. It should also be pointed out that the \textit{Sejm} enacted some allegedly anti-environmental legislation in 1991. Specifically, it deleted provisions of
particular, has had a momentous impact on environmental protection in post-communist Poland. It was designed to improve environmental monitoring and law enforcement, long considered the weakest links in Poland’s environmental protection regime, by increasing the authority and independence of the State Environmental Protection Inspectorate.

Before 1991 the Inspectorate was a small and almost powerless agency attached to the Environmental Protection Ministry. Its four hundred poorly paid, equipped and trained employees were charged with monitoring environmental compliance at some 43,000 polluting enterprises nationwide. But they had almost no power to actually enforce the law against violators. As Jerzy Jendrońska has written, the Inspectorate was an environmental “watchdog without teeth.” The 1991 Law on the State Environmental Protection Inspectorate gave that dog sharp new dentures.

It empowered the Inspectorate to impose non-compliance fines, shut-down dangerous polluters, and ban the import or sale of environmentally harmful raw materials, fuels, machinery and technologies. Inspectors can impose environmental mitigation

Poland’s foreign investment law that authorized the Foreign Investment Council to deny permits on environmental grounds. 1991 Dz.U. No. 60, item 253. However, as Elżbieta Zechenter has noted, the Council retains the authority to revoke the permits of foreign investors whose activities cause significant environmental damage. Zechenter, supra note 7, at 120 n. 166. However, she concludes that “the 1991 FIL (Foreign Investment Law) appears to be symptomatic of the current trend to disregard environmental issues among the Polish legislators who have ‘more pressing concerns to attend’ given the current political situation.” Id. However, those same legislators were apparently not too preoccupied with other political concerns to enact the four pro-ecological statutes discussed in the text accompanying this note and notes 104-107.

116. See, e.g., Jendrońska, supra note 29, at 533 (“Enforcement was the weakest link in the . . . environmental regulatory scheme”); Jerzy Jendrońska, Compliance Monitoring in Poland: Current State and Development, in 1 INTERNATIONAL CONFERENCE ON ENVIRONMENTAL ENFORCEMENT: CONFERENCE PROCEEDINGS, SEPT. 22-25, 1992, BUDAPEST, Hungary 351, 351 (1993) (“environmental problems were not caused by the absence of environmental laws, but first of all by the fact that these laws were not enforced.”). For similar assessments of other former Soviet Bloc countries, see, e.g., MARSHALL I. GOLDMAN, THE SPOILS OF PROGRESS: ENVIRONMENTAL POLLUTION IN THE SOVIET UNION (1972); CHARLES E. ZIEGLER, ENVIRONMENTAL POLICY IN THE U.S.S.R. 81 (1987); Hilary French, Green Revolutions: Environmental Reconstruction in Eastern Europe and the Soviet Union, in WORLDWATCH INSTITUTE, 99 WORLDWATCH PAPER 34 (Nov. 1990); PHILLIP R. FRYDE, ENVIRONMENTAL MANAGEMENT IN THE SOVIET UNION 90-91 (1991).

measures on new plants, which cannot begin operations until they are certified in compliance. And the Inspectorate now exercises oversight authority over all environmental monitoring in Poland; it sets the standards for all other monitoring agencies and laboratories. Consequently, monitoring procedures that used to be haphazard have become consistent. The Inspectorate operates a national database for environmental information collected by regional monitoring agencies and laboratories; it serves as a clearinghouse providing environmental information to other government agencies, non-governmental organizations and the public. Finally, the 1991 law ensured improved funding and staffing so that the Inspectorate could carry out its new and expanded responsibilities. Today the agency employs three thousand environmental inspectors operating out of fifty offices (including the Warsaw headquarters and a branch office in each of Poland’s forty-nine województwa (administrative regions).\footnote{For more on the 1991 Law on the State Environmental Protection Inspectorate, see WOJCIECH RADECZKI, USTAWA O PaństWOWEJ INSPEKCJI OCHRONY ŚRODOWISKA [LAW ON THE STATE ENVIRONMENTAL PROTECTION INSPECTORATE] (1992); WOJCIECH RADECZKI, PRAWO OCHRONY ŚRODOWISKA W PRAKTYCE [ENVIRONMENTAL PROTECTION LAW IN PRACTICE] ch. 12 (1994).}

The increased power of the State Environmental Protection Inspectorate has led directly to improved environmental monitoring, compliance, and enforcement in Poland since 1991. For example, one of the first priorities of the Environmental Ministry’s National Environmental Plan was to reduce emissions from Poland’s eighty largest industrial polluters.\footnote{NEP, supra note 9, at 12.} Pursuant to that program, the Inspectorate already issued three thousand decyzji [administrative verdicts] requiring polluters to install pollution control equipment; it completely shut down seven plants; it closed parts of twenty-five plants, and temporarily halted production at twenty-two others. These actions have resulted in substantial pollution reductions. According to information from the Chief Inspector’s office, dust emissions from cement plants on the list declined by 60%; lead and copper emissions from foundries on the list fell by 60 and 32%, respectively; and carbon dioxide emissions from listed power plants
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decreased by 40%. By 1995, the volume of wastewater effluent discharged by listed factories had declined by about 37%, and toxic waste by about 42%. These significant pollution reductions are not temporary byproducts of economic recession, but the direct effects of deliberate environmental law enforcement activities.

Perhaps the greatest testimony to the increased power and effectiveness of the State Environmental Protection Inspectorate comes from those who now oppose it. In a recent meeting with central administrators, regional authorities (wojewodowie and large city “presidents”), undoubtedly acting on behalf of local economic interests, called for the Inspectorate to be dismantled. This seems unlikely to happen, but the point is that no one would bother with the Inspectorate were it not having a significant impact.

The Inspectorate’s enforcement activities have been facilitated by systemic reforms, most notably the institution of a constitutional Rechtstaat (literally “law-state”) in Poland. During the socialist era, environmental statutes, like all laws, were mere policy instruments that the Party/state could simply disregard (under the vacuous constitutional doctrine of “socialist democracy”) whenever they proved inconvenient. That is no longer the case. There has been a profound change in Poland’s legal culture that has received far too little attention.

One good example of how much the legal culture has changed already is the fight over environmental protection equipment at Warsaw’s Okęcie II airport. In the mid-1980s (before the fall of communism), Warsaw city officials entered into agreement with a West German-led consortium to build a new international airport. At that time, the 1980 EPDA required the airport (as a new development

121. Truciciele, supra note 51.
122. Interview with Dr. Jerzy Jendrośka, Environmental Law Group, Polish Academy of Sciences, in Wroclaw, Poland (August 15, 1995).
123. CONST. OF THE REPUBLIC OF POL. art. I (as amended).
124. I have discussed this case previously in Cole, supra note 34, at 351-52.
project) to install any environmental protection equipment deemed necessary by the State Environmental Protection Inspectorate. Inspectors ordered the airport to install sewage treatment and incineration plants, noise monitors, and acoustic barriers. However, in an agreement typifying the status of law under Communism, Warsaw city officials summarily waived the environmental rules. This was done behind closed doors, without any public comment. So Okęcie II was built without the required environmental installations. However, by the time the new airport was ready to open in 1992, the political-economic system had changed; the law was no longer subordinate to politics, and the airport's noncompliance with environmental requirements was headline news all over Poland. The main environmental protection inspector from Warsaw threatened to close down the airport. The case was brought before the Main Administrative Court, which ruled that the airport could remain open, but ordered the airport to retrofit all of the originally required environmental protection equipment within eighteen months. In other words, the law was substantially (if imperfectly) enforced. The story of Okęcie II shows that the law in post-communist Poland is becoming a real source of social and economic control, which can no longer be simply ignored by politicians, administrators and managers.

H. International Cooperation for Sustainable Development

In February 1995 the Constitutional Commission of Poland's Parliament approved language for Article 5 of a new (yet to be adopted) constitution:

The Republic of Poland safeguards the independence and inviolability of its territory, guarantees the human rights and liberties, ensures the security of its citizens, safeguards the national heritage, and ensures the protection of the


natural environment guided by the principle of sustainable development.128

This provision is consistent with the Environmental Protection Ministry’s National Environmental Policy, which established the goal of achieving sustainable development throughout the Polish economy within thirty years.129 The concept of sustainable development is, of course, quite fuzzy. No one is quite sure what level or mode of development (if any) is sustainable, which serves to make the phrase “sustainable development” a convenient reference point for empty political rhetoric.130 But the Polish government has, at least, backed up its rhetoric with some meaningful actions.

Poland has been actively pursuing international arrangements that promote sustainable development. It has established “euro-regions” along its borders with Germany, the Czech Republic, Slovakia and Belarus, where joint environmental protection and conservation projects are planned.131 In April 1994, Poland and Germany signed an environmental treaty which, among other things, provides for joint monitoring, collaboration in environmental investigations, and information exchanges in the border regions. Most significantly, the treaty gives Polish citizens the right to participate in public hearings concerning proposed developments and environmental projects on the German side of the border.132 The Polish government has also initiated what is being called “the greatest

129. See supra note 28 and accompanying text.
130. As the economist Bogusław Fiedor recently pointed out to me, “sustainable development” for scholars means “sustainable research.”
cooperation project in environmental protection” in all of Europe.133 The “Green Lungs of Europe.” The idea is actually an extension of the “Green Lungs of Poland” project initiated more than a decade ago by a forester and hiker from Białystok named Krzysztof Wolfram (now a member of Poland’s parliament). The goal of the international program is to ensure ecologically sustainable development of a huge and relatively unspoiled region of Central and Eastern Europe, covering 760,000 square kilometers and including parts of seven countries—Estonia, Latvia, Lithuania, Russia, Ukraine, Belarus, and Poland. In March 1992, environmental officials from those countries met in Poland to sign the “Wigry Declaration”, which established the “Green Lungs of Europe.” In February 1993, they signed the final accord in Warsaw. Poland’s national commitment to the “Green Lungs” project is sizeable—50,000 square kilometers, comprising 18% of the country’s territory. According to the agreement, all future economic development in the region will have to be “undertaken in harmony with nature, making it possible to preserve the natural environmental intact for future generations.”134 This commitment entails substantial political and economic risks for the Polish government because the protected region already suffers from the highest rate of unemployment in the country.135 But it is a far-sighted and innovative program, extending far beyond traditional “end-of-the-pipe” environmental policies.


IV. THE FUTURE OF ENVIRONMENTAL PROTECTION IN POLAND

Poland’s record of environmental protection over the last half-decade is commendable, especially considering the deep economic recession of 1989 to 1992. Deliberate environmental policies of the Polish government, facilitated by systemic reforms, have brought structural environmental improvements. But they have not yet ended the ecological crisis. Certain regions of Poland remain highly contaminated.\footnote{136} At the beginning of 1993, national air pollution levels were still six times higher than the European Union’s legal limit.\footnote{137} Many of Poland’s larger cities, including Poznań, Szczecin, Kraków and Łódź, were still without operational sewage treatment plants.\footnote{138} As a result, many Polish waterways were so polluted that “you could develop film” in them.\footnote{139} Poland’s industries still produced a million tons of hazardous waste each year, 63% of which was dumped at sites with no protection against groundwater contamination.\footnote{140} As a result, public health continued to suffer. For example, in 1993 infant mortality in the heavily polluted region of Upper Silesia was 30 per 1,000 live births, twice the national average and five times the average in countries belonging to the Organization for Economic Cooperation and Development (OECD).\footnote{141}

These facts simply confirm what most observers understood quite well in 1989: cleaning up the environmental mess created

\footnote{136} We should remember, however, that the majority of Polish territory (up to 80%) is not highly polluted. Indeed, some parts of Poland are among the most pristine locations in Europe, many of which are protected national parts, nature reserves or landscape parks. Poland also is home to five world biosphere reserves. \textit{See, e.g.}, Eugeniusz Pudlis, \textit{NFOS, ECOFUND BOARDS: Funds for a Green Treasurehouse}, \textit{THE WARSAW VOICE}, Apr. 2, 1995 LEXIS, World Library, Allwld File.


\footnote{139} Mark Milner, \textit{Poland: Petro-Pall Hangs Over Plock}, \textit{GUARDIAN}, Nov. 21, 1993, \textit{available in LEXIS}, World Library, Allwld File, \textit{quoting} Dr. Witold Lenart, Vice-Director, Warsaw University Environmental Studies Centre.


\footnote{141} Borger, \textit{supra} note 137.
during more than forty years of socialism would not be quick, easy or cheap. Five years into the transitions, it is no surprise to find that Poland still has a long way to go. There will be no ecological miracle in Poland, as Tomasz Żylicz has admonished. But acknowledging this obvious truth should not prevent us from recognizing that very real progress has been made.

Environmental protection in Poland has improved significantly in Poland since 1989. These improvements have not been reversed or curtailed by the resumption of economic growth. And while it is true that Polish governments since 1992 have shown little to no interest in environmental protection, there remain two overriding reasons to expect continued improvement. First, on August 8, 1994, Poland applied for full membership in the European Union, with the hope of joining by the year 2000. As a precondition to membership, Poland must “harmonize” its laws, including its environmental laws, with E.U. Directives. Harmonization will require more than simply enacting nice looking laws. Mere paper changes unaccompanied by implementation and enforcement efforts are unlikely to impress current E.U. members; Poland will have to show continued actual progress in environmental protection. And, just in case extra incentives are needed, the Polish government needs only consider the tremendous economic costs of excessive pollution and resource waste—10 to 20% of annual GNP. For Poland a stringent and costly environmental protection regime is likely to be much less expensive than doing nothing at all. Prudent environmental investments should yield substantial economic returns. Poland’s current Finance Minister, Grzegorz Kołodko, acknowledged this fact recently when he declared that stabilizing pollution emissions is just as important for Poland’s economy as stabilizing the złoty.

142. See supra note 10 and accompanying text.


145. See supra notes 83-86 and accompanying text.

The question remains whether "harmonization" with E.U. Directives is enough, given Poland's serious environmental problems. Some have argued that Poland should pursue more "[r]adical environmental policies," including immediately closing-down all inefficient (and dirty) state enterprises and setting the prices of raw materials at levels reflecting the true social costs of their use. In theory, these suggestions may be economically and environmentally attractive, but they are not politically feasible. Given the employment concerns of voters and the still potent political force of Poland's trade unions, it would be politically dangerous for any Polish government to even suggest such draconian measures. In 1991, when the government attempted to close down the inefficient and highly polluting pig iron section of the Sendzimir steel mill in Nowa Huta, workers from the Solidarity '80 trade union went on a hunger strike until the order was rescinded. In 1990, when the Ministry of Environmental Protection tried to introduce an ad valorem fuel tax of 4% to be earmarked for the environmental protection budget, the Solidarity trade union issued the following statement: "While the union is for environmental protection, it will not approve any such burden laid on the impoverished society." More recently, the Solidarity union defeated government plans to make the mining industry cleaner and more efficient. While we might deplore the fact that Poland's trade unions are fighting against environmental protection, their concern over the potential socio-economic consequences of environmental policies is not illegitimate (especially if we consider that Poland's environmental taxes already are among the world's highest).

Consider what the impact would be on the ordinary Pole's quality of life if environmental fees were set at true social cost levels

147. See, e.g., Manser, supra note 6, at 149-56.
150. Żylicz, supra note 20, at 105.
and all inefficient state enterprises were immediately closed. Are the benefits of a quick and dramatic reduction in air pollution emissions worth the costs?\textsuperscript{152} In Poland’s case, at least, there seems to be no way of avoiding trade-offs between environmental protection and employment.\textsuperscript{153} It is certainly understandable that workers would protest against environmental protection policies that might cost their jobs. And it is far from clear that environmental concerns should automatically trump labor concerns, notwithstanding Poland’s ecological crisis.

The Poles, like everyone else in Central and Eastern Europe, want improved environmental protection, but to what degree? Consider if Polish cities improved air quality during the next decade or so to the level of, say, Los Angeles. Would this be cause for celebration or recrimination? Los Angeles, as everyone knows, has the worst smog problem in the United States; it is the only city in the country designated “extreme” nonattainment for ozone (the primary constituent of smog) under the Clean Air Act.\textsuperscript{154} But Los Angeles actually meets the federal smog standards more than 99% of the time.\textsuperscript{155} As those standards are set at levels to protect public health with “an adequate margin of safety,”\textsuperscript{156} the health of Angelenos is presumably at some non-zero level of risk from smog less than one% of the time. Consider, by contrast, the Polish city of Bytom, where public health is threatened by air pollution literally every hour of every day. According to a recent documentary on risk produced by

\textsuperscript{152} Consider, for example, at the beginning of 1992, coal prices in Poland were 18 times more than at the end of 1989, and cooking gas prices for the average household were 80 times higher. See \textit{Czaja}, \textit{supra} note 49 at 27.

\textsuperscript{153} Closing down the unprofitable mines in the Wałbrzych region, which already suffers from one of the highest rates of unemployment in Poland, would put an additional 15,000 miners out of work. \textit{Czaja}, \textit{supra} note 49, at 36-37; see also Jerzy Filar, \textit{Bobrek Steel Mill: Pollution or Jobs?}, \textit{THE WARSAW VOICE}, Sept. 12, 1993, \textit{available in LEXIS}, World Library, Allwld File. The trade-off between jobs and environmental protection is more pronounced in Poland than many other countries for economy-specific reasons. See \textit{Employment and training implications of environmental policies in Europe}, ILO Doc. ETIEPE/1989/1, \textit{TRIPARTITE MEETING OF EXPERTS ON EMPLOYMENT AND TRAINING IMPLICATIONS OF ENVIRONMENTAL POLICIES IN EUROPE} (GENEVA 20 Nov.-5 Dec. 1989).


\textsuperscript{156} 42 U.S.C. § 7409(b)(1).
public television station WGBH in Boston, air pollution in Bytom *on an average day* is six times worse than in Los Angeles *during a smog alert*.157 Would Bytom’s residents consider it a disappointing failure to achieve only the same levels of air pollution as Los Angeles? Given their extreme situation, we might suppose that they, more than others in Poland, would support draconian measures to reduce air pollution. But they too want to keep their jobs, homes and cars.158 What could possibly persuade them that breathing (marginally) cleaner air is more important than earning a pay check to support their families?

While all Poles want improved environmental protection, there is little agreement on *how much*. This is not particularly surprising; after all, there is no scientific or socio-political consensus anywhere in the world on what constitutes *adequate* environmental quality. Perceptions of environmental risk and demands for environmental quality are often relative to other needs and concerns. Improving environmental protection is hardly the sole concern in post-communist Poland. The needs of Polish society are vast and varied; meanwhile resources are scarce. Ultimately, in a democratic Poland, the people will decide with their votes and pocketbooks how much environmental protection they desire.

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