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ENVIRONMENTAL PROBLEMS IN POLAND

Summary: That the process of rapid industrialization in Poland resulted in dangers to health and the environment was recognized in the early 1950s. In order to deal with the problems, particularly contamination of water and air, several special bodies were established and numerous regulations passed. Despite these measures, the struggle against pollution has not been able to match strides with the growth of heavy industry. Plants have often been located in areas of historic or artistic importance, and purification equipment has not always functioned effectively. In recent years, in addition to its domestic efforts to combat pollution, Poland has entered into various international agreements designed to study the problems associated with the destruction of the natural environment. It has also received co-operation and financial support from the United Nations. Although acknowledgement of the seriousness of the issue and some of the efforts to date are to be welcomed, the problem of pollution is still of considerable magnitude. If it is to be overcome, more careful planning, stricter regulations, and more conscientious enforcement of these regulations are essential.

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History

There was no recognized threat to the environment in Poland either before World War II or immediately after it. When the problem eventually did crop up, it first appeared, understandably enough, in the industrial voivodships of Katowice and Cracow, and pollution then spread northwestward and eastward, leaving the northern and central-eastern regions of the country comparatively unaffected.

As early as 1952, complaints appeared in the press that the water shortage in Upper Silesia was increasing yearly. The development of industry, notably coal mining, which resulted in ever-deeper penetration into the earth in search of coal seams, was causing the escape of water into lower levels in the interior of the earth. (1)

Such indirect complaints about the undesirable results of industrialization, while not common at the time and under the then-prevailing conditions, did occur occasionally. On the whole, they merely stated that the air was foul and that there was a shortage of water. But, in the second half of 1954, Jerzy Zietek, then vice-chairman of the Katowice Voivodship People's Council (now its chairman) advocated as a remedy the prewar method of intensive afforestation -- recommending the application of this measure to the 12,000 hectares of Silesian industrial wasteland. (2)

Causes

In Poland, there are on the national scale two main culprits so far as pollution is concerned: the technocrats and the party. The two together have rushed unplanned industrialization of the country solely for the sake of production, usually ignoring its adverse side effects. On the one hand, there are many engineers fascinated by great industrial works, impressive production results, and high turnover. On the other there is the party, which not only willed rapid industrializa-

(1) Trybuna Ludu, 21 September 1952.

(2) Ibid., 8 August 1954.

tion but which has been fascinated to at least an equal degree with the size of industrial plants and the glory of industrial achievements. Perhaps its greatest error has been the deliberate, not always economically justified, but ideologically motivated location of industrial plants in some of Poland's most interesting environs. For example, Nowa Huta was built near "reactionary, clerical, and intellectual" Cracow, Poland's old royal capital, in order to "proletarianize" that stubborn city. In the process, some of the most fertile agricultural fields were destroyed, the attitude of Cracow remained unchanged, and the resulting air pollution threatens the famous Wawel Castle with corrosion. The Warsaw Steelworks were built in the capital, which has always had considerable industry, most of it small-scale factories, but has now thus acquired its own heavy industry "worthy" of the capital of a communist state. That such concentration of industry was a mistake is now recognized even by the communist media. The Plock refinery and the Pulawy nitrogen compound works fall into the same category.

Of course, as one Polish journalist remarked, "any location for an industrial plant is bad," but, he continued, "one ought at least to try to choose the least harmful." Another was even more explicit on the subject of official lack of respect for nature: "There will be a festival, at which the minister in charge of the destruction of nature, in the name of an immediate increase in the money flowing into the state treasury by the cheapest means . . . will tell us how many cubic meters of wood have fallen under the strokes of iron. There will be congratulations and decorations, and we shall feel as if we had lost brothers and sisters." (3)

Water Pollution

Back in the early 1950s, even under the then prevailing political conditions, alarming articles appeared about the

(3) Zycie Warszawy, 14 April 1972.

pollution of Poland's rivers. There were complaints that the Vistula near Warsaw was polluted by municipal waste from various nearby towns, (4) and that the Zabrze electrical works, permitted to draw its water from the municipal system, was causing a water shortage for the inhabitants. (5) There was a similar case in Wroclaw. Local factories there could either use their own existing water supply systems or build new ones, but instead, many preferred simply to draw water from the municipal system, thus depriving Wroclaw of 40 per cent of its water. Sejm deputy Stanislaw Kowalczyk, who lodged the latter complaints, also mentioned that unprocessed industrial waste was being discharged into rivers. He stated that "in 20 years' time, most of our river water will be unfit for drinking, bathing, and even for industrial use." (6)

Two years before then, phenol was already causing complaints. Ever since that time, this compound has been one of the most common and most formidable problems of Polish water pollution. At first quantities were too low to endanger human health, and even fish were not poisoned by it. But even then, the "experts thought that such a situation could never be tolerated, that water conservation strictly speaking did not exist in factories," and that the factories, like the ministries, displayed no concern and made no provisions at all in their building plans for the installation of water purification equipment, or did so only to an insignificant degree. (7)

Deputy Kowalczyk's pessimism in the mid-1950s proved justified. By 1967, only 20 per cent of Poland's rivers had water fit for communal use, i.e., fit to be drawn into municipal water systems, while 35 per cent had water polluted above the permitted level. (8) At that time, the River Oder was

(4) Ibid., 17 September 1954.

(5) Ibid., 19 July 1954.

(6) Ibid., 3 December 1956.

(7) Trybuna Ludu, 5 March 1954.

(8) Ibid., 17 August 1967.

unusable throughout its entire length, while the Vistula was polluted along 60 per cent of its course. Thus the two major Polish rivers were almost totally contaminated. In 1970, out of 30,000 km. of rivers, only 34 per cent had water fit for fish breeding, 28 per cent was satisfactory for agricultural use, and 37.7 per cent was unfit even for industrial purposes. (9)

The last point is one which must concern industry itself, for the unprocessed industrial waste discharged from one factory deprives another of its water supply. By 1960, the Vistula was unusable from its source along the first 160 km. of its length, and was usable only to a limited degree farther down its course. (10) Since then some progress has been made. While 742 km. were contaminated above the permitted level in 1964, three years later only 335 km. were thus affected. However, during the same time, the purity of water in Poland's other rivers also deteriorated, so that the over-all picture did not change for the better, although the Inspector for Water Protection issued a statement in 1970 that it had not further worsened since 1968. (11)

Associated with the pollution of inland waters is the closely related problem of the contamination or destruction of fresh-water fish. This has never been a food of major importance in Poland, but what has happened to it is a clear illustration of the biological damage which is being done to the country's rivers.

The Petrochemia oil refinery in Plock, which processes the crude oil coming in through the Friendship Pipeline from the USSR, has occasionally been accused of poisoning the fish in the Vistula, and of making all fish caught below the plant taste of oil. Although stubborn about admitting guilt when other types of pollution are involved, the plant's executives admit that the oily taste of the fish caught below the

(9) Slowo Powszechne, 4-5 April 1970.

(10) Glos Pracy, 22 March 1960.

(11) Slowo Powszechne, 23 December 1970.

works is due to the refinery's activities, although to date no suitable explanation has been found for the precise reason, and, of course, no method of prevention has yet been worked out.

Fish breeding and angling are two reasons why it is particularly important to keep clean rivers or portions thereof where both activities take place. From time to time some factories, mainly small ones, release unpurified industrial waste and poison the fish in such waters, whereupon fish breeding co-operatives and/or anglers' associations holding local fishing rights institute proceedings for damages. As a rule, this sort of case catches the eye of the press and results in some sharp comments about industrial practices. In this fashion, insignificant local cases sometimes get nationwide publicity. In such cases, the culprits are usually small food-processing plants, breweries, dairies, and sugar beet refineries. Some of them try to pay their fines quickly and quietly in order to escape unwanted publicity. Funds for this purpose are set aside, and the higher authorities in the industrial association involved are usually most accommodating.

Air Pollution

As in the case of water, air pollution was first observed and complained about in Upper Silesia, although it was certainly not confined to that area. In the mid-1950s, it was reported that four tons of soot and ashes fell daily on every square kilometer in this region. There were also complaints that chlorine, hydrochlorine, and calcium cyanamide fumes from the nitrogen works in Jaworzno had destroyed scores of hectares of an 80-year-old forest. Complaints were also made about air pollution in Tarnow, Kielce, and Jelenia Gora. (12)

The study of air pollution began in 1955. It was then reported that the most polluted city in Poland was Chorzow,

(12) Glos Pracy, 24 January 1956.

where 20 tons of pollutants fell daily on every square kilometer, when the maximum permissible amount unharmed to human health is one ton. In contrast, such major industrial areas as Glasgow and the Ruhr have only 0.4 and 0.3 tons of such fall-out, respectively. (13) However, another journalist at about the same time was of the opinion that Birmingham and Baltimore have worse conditions in this respect than did Silesia. (14)

The total loss in coal dissipated as dust in the air was estimated in 1957 at 400,000 tons annually. (15) However, air pollution is not caused by coal dust alone, but also by various gases. Sejm deputy Pawel Dubiel estimated that, in Silesia, 15,500 cubic meters of industrial gases and a ton of dust are released annually per head of population. (16) It is easier to eliminate dust pollution than that of industrial gases.

Pulawy as the "Polish Venice"

A reprise on a smaller scale of the situation in northeastern Italy (where the art treasures of Venice are menaced by the giant nearby Maghera-Mestre industrial complex) is to be found in Pulawy. The now famous -- or notorious -- case of the Pulawy nitric compounds factory could serve as an excellent example of what not to do -- not merely from the point of view of air pollution alone, but because of the over-all disastrous results of industrializing areas which are of major historical or artistic interest.

(13) Trybuna Ludu, 24 January 1957.

(14) Tygodnik Demokratyczny, 26 October 1960.

(15) Trybuna Ludu, 2 June 1957.

(16) Glos Pracy, 14 August 1957.

Pulawy, one of the most popular tourist attractions in Poland, is a small town of 14,000 inhabitants which has been famous for its palace and park since at least the 17th century. Until 1831, both were the property of the Princes Czartoryski when the last owner, a hero of the uprising of that year, had to flee into exile. The park is surrounded by a wall, unique in Poland, called a "garden fortification," the work of the famous Polonized Dutch architect Tylman of Gameren, one of the greatest architects Poland has ever had. The park, full of centuries' old trees, was described in the 18th century by the Abbé Jacques Delille in his famous poem, Les Jardins.

It was here, on the banks of the Vistula, among parks and forests, that about 1960 it was decided to build "the fifth largest factory in Poland, the huge nitric compounds plant." (17) The inhabitants did not evince any great enthusiasm, evidently preferring their status as citizens of a "Polish Williamsburg." (18)

Although occasional complaints were heard during the initial period of construction about the lack of character or style of the new housing and the absence of greenery between the new blocks, people still tended to be optimistic. It was assumed that the industrial waste water, properly purified, would be "purer than river water." In addition, scholars "praised the well-chosen location of the factory, on land unfit for agricultural utilization." (19) Soon, however, it emerged

(17) Przegląd Kulturalny, 23 March 1961.

(18) Polityka, 9 March 1963; Słowo Powszechne, 27 August 1963; Radio Warsaw, 12 June 1964.

(19) Trybuna Ludu, 10 October 1965.

that everything about the factory was immense: "Great masses, great pressure -- and then quantity is transformed into quality -- technological problems are born. . . . It appears that the ventilation system was planned on too modest a scale; that, here and there, things are not sufficiently airtight."

But even before the full extent of the resulting industrial pollution emerged, another dispute of history and art versus the technocratic love of proceeding along a straight line, at low cost, arose. It was decided that a trunk road would be cut through the famous park. In fact, work actually began on it. Building the road would have necessitated the felling of centuries' old trees and the making of two breaks in Tylman's garden fortifications. (20)

Controversy raged over the project for several months. It was opposed by various people and groups, including the Polish Academy of Sciences' Agricultural Institute, the owner of the palace and park. Finally, on 27-28 February 1967, a Sejm subcommittee went to see for itself, obviously hostile to the whole idea of the highway. But this came to nothing, and work began on the project. Then the sudden intervention of Professor Stanislaw Lorentz, director of Warsaw's National Museum and a Sejm deputy, secured a restraining order signed by the chairman of the Supreme Chamber of Control. (21)

Soon, however, other features of the process of "transforming quantity into quality" began to emerge. In spite of all the filters, the fall-out, in Pulawy's case mostly of gaseous compounds, created a belt of about 3,500 hectares around the factory where vegetation was threatened. By 1970, 500 hectares of forest had already been destroyed. This zone of destruction gradually spread 15 to 20 km. eastward and southeastward, endangering a further 11,000 hectares. The plant's director-general admitted that the damage exceeded what had been anticipated 10 years earlier, when the factory was planned. But, he added defensively:

(20) Slowo Powszechne, 10 May 1967.

(21) Ibid., 12 and 16 May 1967.

Such plants are to be seen smoking everywhere, even more than ours, for we have purification installations that should, in theory, suffice. We are poisoning the surrounding country not because we are breaking the law, but because of a concentration of production unparalleled in the world. In general, industrial complexes producing nitrogen fertilizer can turn out about 1,000 tons of ammonia per day. In Pulawy we can triple that, producing 3,000 tons daily, and this is the greatest concentration of this sort of production in one place in the entire world. On the average, one obtains an output of nitrogen (the amount of free nitrogen versus stable nitrogen) of about 92 to 96 per cent, depending on the process employed. In Pulawy, this index is in keeping with world standards, for it is about 94 per cent. It emerges from this that 6 per cent of nitrogen is lost during production, either in solution in industrial waste, or in the form of atmospheric gases and dust. Naturally, this 6 per cent, if it comes from a small factory, means a smaller fall-out over a given area than that of the several times larger Pulawy plant. . . . Recovery of that waste is technically possible, but uneconomical. . . . Everything here was built on a colossal scale, because such industrial complexes cost three or four times more when dispersed. Even the firms which provided us with the licenses [for the purification installations] were shocked by the extent of the damage. . . . " (22)

Fortunately, the press would not leave Pulawy alone. Early last year, it again challenged the director's explanations:

Some maintain that this is the largest industrial complex of its sort in Europe. . . . Not everyone -- not even all chemists -- are of the opinion [that this is cause for rejoicing or boasting]. The difficulties

with such establishments are no secret to chemists. Perhaps this is the reason why some countries avoid developing such industries, preferring to buy their products ready-made elsewhere. (23)

Other Examples

The Polish press continues to be full of critical stories about factories polluting water, poisoning fish, and even contaminating water in municipal water systems. Warsaw's water supply, for example, was recently contaminated by phenol; although in this case it was not dangerous to health, Varsovians had to put up with water which both smelled and tasted nasty for a few days. The source of the contamination was a factory situated on the Vistula tributary over 260 km. southeast of Warsaw, in the Ezeszow Voivodship. The adulteration occurred on 10 January 1972, but the guilty factory was not identified until January 22.

There are also reports about factories clandestinely putting their outflow pipes into rivers, confounding inspectors who know that all neighboring factories have purifying plants in good order; other stories tell of factories which discharge their refuse into rivers late in the evening, after the inspectors have completed their work for the day. One factory indulged in this practice between 0100 and 0400 hours; others do so on week ends. Some inspectors, knowing that, sooner or later, a factory must release its waste, keep watch far into the evening, waiting until, choked by its own waste, the plant has no other recourse but to start discharging it into the river, whereupon the inspectors impose a fine. Unfortunately, however, such fines are sometimes later rescinded by the local people's councils. (24) One factory is said to have made a special study of the inspectors' methods of work, so

(23) Stolica, 21 February 1971.

(24) Tygodnik Demokratyczny, 5 April 1970.

that whenever a check was made, its purification equipment was always in perfect order, operating smoothly and efficiently. But on one occasion an inspector neglected some formality or other and unexpectedly returned to the factory to find its purifier standing idle.

It is difficult to account for such behavior, which can cost a factory considerable sums in fines or indemnities for damage done, and which, furthermore, makes its directors liable to both fines and criminal prosecution. Some journalists feel that the directors simply underestimate or do not understand the importance of the problem involved. One plant (the aluminum factory in Konin) was said to stop its purification equipment in order to cut down on the electricity bill.

While there are perfectly evident difficulties in regular maintenance of complicated and costly equipment such as is to be found in purification plants, as well as the priority inevitably given a factory's regular production equipment, even at the cost of the purifiers, factories do seem to have sufficient funds set aside for paying fines. Some are even reported to pay off, on a regular basis, fishing co-operatives and other nonindustrial associations concerned with pure water. The sole exception here is the Polish Anglers' Association. The anglers demand indemnification whenever one of their fishing grounds is poisoned, and have often succeeded in causing considerable stir on a nationwide scale through their many members who are journalists, or have friends in the profession.

The great sums which have undeniably been spent on new purification installations should have produced a visible improvement, not merely a self-satisfied statement that the new equipment has succeeded in halting further deterioration of the situation. Some explain the lack of improvement by the increase in the number of new industrial plants which occurs simultaneously with the installation of improved filters, etc., in existing factories. This explanation opens the field to speculation about the amount of respect shown toward existing water laws, as well as about how all the money officially earmarked for the purchase and installation of purifiers is actually

used.-- i.e., whether it is only (or mainly) the new factories which benefit. Finally, it also calls into question the operational efficiency of all existing purification equipment, both new and old.

International Aspects of the Problem

The pollution problem has two main international aspects: protection of border lands and waters, and international bodies of water (i.e., the Baltic); and the damage done by joint Comecon projects such as the Friendship Pipeline and its terminal refineries and cracking plants.

It is interesting to note that the Polish media generally avoid any discussion of the pollution of Polish or border waters caused by neighboring bloc countries. Nothing is ever said about the long stretch of frontier with the Soviet Union, considerable portions of which are demarcated by the River Bug, whose headwaters are in the USSR. While it is perfectly possible that no major Soviet industry is located there (and pollution is thus not a problem), reticence on the part of the Polish press would be equally probable were the reverse the case.

Poland's other major river is the Oder, which it shares with Czechoslovakia and the GDR. The Polish press has contained some veiled, and very mild, references to the discharging of waste into the Oder by these two countries. On one occasion the Polish party daily published a rather impatient comment to the effect that Polish-Czechoslovak talks on the question, which had been going on for some years, "must surely produce results." (25) It was left to a Czechoslovak periodical to provide some angry revelations on the amount of pollution Czechoslovak industry produces in Poland (the Oder) and East Germany (the Oder and the Elbe). It admitted that Poland, unable to achieve any satisfaction in low-level

(25) Trybuna Ludu, 4 September 1962.

negotiations, had appealed directly (and fruitlessly) to President Novotny, and that the CSSR pays Poland millions of Kcs annually in penalties. Only from a Czechoslovak source, too, could one have learned that the Wroclaw water supply had been fouled by Czechoslovak industry. (26)

Only recently, and under different circumstances, has something been done about this question.

Poland has signed agreements on water conservation covering territorial waters shared with the USSR, Czechoslovakia, and the German Democratic Republic, defining the principles of water conservation, protection of the atmosphere from pollution, flooding, and joint water investments. It is planned to conclude agreements with the GDR and Czechoslovakia on the prevention of atmospheric pollution. (27)

Once the matter had been raised internationally, Comecon naturally felt obliged to participate, and an agreement was signed in Moscow earlier this year on scientific co-operation among its member countries in support of environmental protection. Poland was made responsible for the organization and co-ordination of "socioeconomic and legal-organizational aspects" of the scheme. From March 7 through 10 a conference of Comecon specialists was held in Warsaw to discuss programs for the years 1972-1975 (28) but the whole matter evoked very little interest in the Polish press.

Far greater candor has been evident in articles dealing with the pollution problem in the Baltic. The question of

(26) Kulturny Zivot, 17 August 1963; Nova Svoboda, 11 July 1963.

(27) PAP in English, 10 May 1972.

(28) Trybuna Ludu, 11 March 1972.

how to improve the condition of its waters has been given extensive press coverage in Poland, and proposals have even included the closing of the Danish straits with dams, thus turning the Baltic into a fresh-water lake. So far the matter seems to have been confined to the newspapers, and there has been no official involvement in concrete plans. But this does not mean that the Polish government is on principle opposed to such involvement: in 1970 an agreement was drawn up among the states bordering on the Baltic coast designed to combat oil pollution in which Poland, the USSR, and the GDR participated from among the bloc countries. The agreement was never signed, however, because countries with no diplomatic relations with East Germany could not agree to its signature at government level. (29) In spite of that particular failure, when a conference on marine law was held in Brussels in December 1971 and the 1969 convention on indemnification for damage caused by oil pollution of the open sea was signed, editorial comment dwelt in detail on Poland's special interest in preventing the contamination of the Baltic. (30)

U Thant's statements on the dangers of global pollution and the action which followed on the part of various UN agencies enjoyed full support in the media, as well as official Polish co-operation. Poland has itself profited from this co-operation. In mid-1965, research into water pollution began with support from the UN Special Fund to the tune of 1,381,000 dollars through the agency of the World Health Organization. The subject of the study was the purifying, desalinization, and cooling of river water. (31) On completion of the project (or perhaps following the exhaustion of funds) in 1971, the UN Development Fund made a further contribution of 1,400,000 dollars for further studies of the methods of combating water and air pollution. (32)

(29) UPI, 28 August 1970.

(30) Trybuna Ludu, 21 December 1971.

(31) Zycie Warszawy, 30-31 August 1970.

(32) Trybuna Ludu, 3 February 1972.

(33) Trybuna Ludu, 3 February 1972.

The project will be based in Katowice and will be mainly concerned with the Cracow-Katowice area. (33) Moreover, the Conference of European Statisticians (one of the committees of the Economic Commission for Europe) with which the Polish Central Statistical Office has been co-operating since 1956, has entrusted the CSO with the organizing in Warsaw in 1973 of an International Seminar on Environmental Statistics. (34)

The Polish press has reported on various international meetings devoted to the subject of combating pollution. Professor Wlodzimierz Michajlow, chairman of the Polish Academy of Sciences' Committee on Man and His Environment, while discussing the symposium held between 3 and 15 May 1971 in Prague, also dealt in some detail with the 16th UNESCO Conference (October-November 1970) which laid some of the groundwork for the forthcoming Stockholm conference. (35)

Warsaw has sent delegates to various conferences organized by the UN agencies. There has been some difficulty about the East European countries' attending the Stockholm conference because of the communist demand that the GDR be permitted to attend with full voting rights.

Among the experts who have been commissioned to contribute to the reports of that conference are Professor Walery Goetal of the Cracow Academy of Mining, and Anna Medwecka-Kornas of the Nature Conservation Research Center in the same city. (36)

Pollution in the "capitalist" countries is rarely mentioned in the Polish media, but statements have occasionally appeared to the effect that the communist countries, because

(33) RFE Special/New York, 14 January 1972.

(34) PAP in English, 13 April 1972.

(35) Trybuna Ludu, 4 May 1971.

(36) RFE Special/UN, New York, 2 May 1972.

of the very nature of their system of government, are in a better position to do something about pollution. More often, when an article deals with Poland's own internal difficulties in this field, some comparison with the situation in the West is made. In such cases, the relevant figures, regardless of whether they are favorable to Poland or not, are given in impartial fashion and usually without any ideological comment. This has been true from that early point when the problem of pollution was first recognized, even during the pre-1956 period.

The case is quite different, however, when pollution in any fashion touches upon the reputation of the USSR or of Comecon. Perhaps the best case in point here is the huge Petrochemia oil refinery at Plock, which is fed by the Friendship Pipeline. This is admittedly a modern plant with the best available purification equipment. Nevertheless, the plant has been accused of poisoning fish in the Vistula below the works. Although easily able to pay for any damage (it has in fact done so once or twice), more recently the management has refused to acknowledge guilt and has even won cases in the courts of appeal clearing it of responsibility, with the blame put on other, unidentified factories up the river. This refusal to admit guilt is more a matter of the prestige of the complex, which is situated in one of Poland's most picturesque cities with a 1,000-year history. The fact that Plock processes Soviet crude oil may be one reason why it tries so hard to maintain an absolutely spotless reputation.

What Is Being Done?

On the whole, it can be said that as far as legislation on the books, law enforcement agencies, and research institutes concerned with the problem of pollution go, Poland is making a sincere effort to deal with the situation. The real crunch comes when attempts are made to enforce existing laws; although there have been some recent signs of improvement in this sphere, they have been on a local rather than a national scale.

Various regulations have been issued from time to time since at least 1950. The State Inspectorate for Water

Conservation was created in 1954 and put under the jurisdiction of the Ministry of Communal Economy. By 1957 about 100 regulations existed dealing with the problem of water pollution, and in that same year the whole subject of water conservation was transferred to the Ministry of Shipping, which was renamed the Ministry of Shipping and Water Economy, with a special deputy ministry in charge of water pollution problems, a State Inspectorate for Water Conservation, and a Council for Problems of Water Conservancy.

In 1961, the administration of inland waters was given independent, semiministerial status, and a Central Water Conservancy Office was created at that time. In 1962 came the Sejm passage of the basic Water Law, containing 173 articles. (37) And in 1964, a Chief Inspectorate for Water Conservation was created within the administration of inland waters. The chief inspector was ex officio the deputy chairman of the Central Water Conservancy Office.

Finally, in April 1972, the Ministry of Territorial Economy and Protection of the Environment was created to meet currently recognized needs and tasks in protecting the environment. It took over the work of the disbanded Ministry of Communal Economy and most of that of the Central Water Conservancy Office; other responsibilities were delegated to the Ministry of Shipping. (38)

Various consultative and research groups have been created side by side with the above purely administrative offices. Some existing consultative bodies such as the State Council on Nature Protection are also displaying interest in the solution of environmental problems. In 1970, a Committee on the Protection of Environment was created, with Deputy Prime Minister Zdzislaw Tomal as its chairman. Among research institutions, at least three committees of the Polish Academy

(37) Dziennik Ustaw, 11 June 1962, Item 153.

(38) Ibid., 29 March 1972, Items 77, 78, and 79.

of Sciences are taking an interest in these problems. These are the Man and His Environment Committee, the Committee on Siting and Regional Planning, and the Committee on the Protection of Nature and Natural Resources.

In contrast to the various institutions and bodies created and reorganized over the years to deal with the problem of water pollution, there are few if any institutions dealing exclusively with air pollution. Existing institutions have simply been expanded or reorganized to cope with the new problem, as well as with the still newer and more general concept of protecting the environment. In 1966 a law was passed on air protection, which was described as "the best formulated and most progressive law of this sort in the world." (39) In the same year another law indirectly relating to environmental protection was passed, dealing with water supplied to agriculture. In 1970, probably as a partial rebuttal of criticism of some industrial siting, a law on the protection of forests was passed which makes it impossible to erect industrial plants in the country's forest regions.

Considerable state funds exist for the purpose of building new purification plants, and they increase with every five-year plan. In the 1956-1960 period, funds budgeted for purification totaled 750,000,000 zloty; this sum grew to 2,600 million in the 1961-1965 period, and to 4,000 million in the 1966-1970 period. For the current period, 1971-1975, it now amounts to 8,500 million zloty. This sum is to be used for the construction of 1,023 purification plants. (40)

What Has Been Achieved?

In the year 1970, the situation so far as counteracting

(39) Trybuna Ludu, 27 August 1969.

(40) Sztandar Mlodych, 25 March 1970.

water pollution goes appeared statistically to be as follows: 8,400 of the 14,000 industrial plants discharging refuse did so directly into rivers, while 4,600 released theirs into municipal sewer systems. Some 3,500 of the largest plants accounted for 80 per cent of all effluent, and only 2,000 of them had water purification plants. But only 280 out of the entire total had purifiers which operated in a completely satisfactory manner. (41)

Despite the profusion of regulations and offices in the possession of funds earmarked for the protection of the country's waters, specifically for water purification plants, the nationwide results to date have been modest, to put it mildly. In fact, they have done little more than arrest a further increase of pollution on a country-wide scale, and have served merely to shift centers of pollution from one locality to another.

The situation on the Oder has improved a little (desalinization and some decrease in phenol contamination; the salination had been caused by salt water discharged from a number of coal mines.) These achievements have aroused international interest. The situation has also considerably improved on the upper Vistula, but the lower course of that river, as well as other rivers and river stretches, has suffered additional contamination.

Some solid achievements have nevertheless been registered. Polish engineers have devised a very good method of purifying water used in paper mills. The mill in Ostroleka, for example, built in an unspoiled rural setting and in the face of strong opposition, operates without arousing any complaint from farmers or fishermen. But its air purifiers either do not exist or do not work properly, so that dust caused by its operations is constantly damaging the insulation of power lines at a nearby electricity works, causing constant short circuits and even depriving the mill itself of power.

(41) Tygodnik Demokratyczny, 5 April 1970.

Attempts to counteract dust fall-out have centered around efforts to fit electro-filters built by the Pszczyna factory. These filters are being installed in electric power plants and in coal mines, which jointly account for 45 per cent of all dust fall-out. In 1964, power plants accounted for 30 per cent of all pollution. By 1970, a spokesman for the electric power plants, which appear to have been the main culprits in this type of pollution, announced that that problem had been virtually solved. According to official data, there had been a 41 per cent increase in the production of electric power in the years 1965 to 1969, with a 50 per cent rise in the use of coal, but at the same time a drop in coal dust fall-out from the power stations from 1,187,000 to 870,000 tons. Therefore, by 1970, the filters were trapping 7,200,000 million tons of coal dust (which could be reused) and letting only 800,000 through to the atmosphere. In other words, over 90 per cent of the coal dust released by electric power stations was caught and recycled. (42)

This, however, was only one type of dust. There are tragic descriptions of cement dust destroying the countryside surrounding the town of Rejowiec, where the situation became so bad that all plans for developing the town had to be suspended, and even current repairs of the municipal water and sewage systems are impeded by a sense of hopelessness as the town sinks under a cloud of cement dust. This type of dust accounts for almost half of all air pollution in Poland. (43) One exception to this generally gloomy picture is the cement factory in Opole, which has installed some very good but expensive filters. The factory was forced to do so by the public prosecutor and a court decision in a case brought by the Opole Municipal Council. (44)

In general, air pollution is being reduced in Poland, with the efforts of recent years bringing pollution by dust down by 10 per cent. (45) However, the picture is not

(42) Zycie Warszawy, 25 September 1970.

(43) Ibid., 9 October 1970.

(44) Slow Powszechna, 23-24 September 1967.

(45) Express Wieczorny, 31 January - 1 February 1970.

so bright in respect to contamination by gases. (46) And before the process of contaminating the air had been arrested, some 270,000 hectares of forest were destroyed, partly by cement works but in more recent times also by the nitric industry. Here it seems that not even the best filters help very much.

With the successful introduction of techniques of desalinization and the satisfactory control of effluent from paper mills and other cellulose works, phenol is now apparently recognized as the main contaminator of water -- or at least it is the subject most discussed by the press in this context. The contamination of Warsaw's drinking water with phenol has given an opportunity for the writing of some strongly worded articles, (47) but many commentaries have also appeared without such a peg to hang them on.

That the issues of pollution and environmental protection are so widely discussed is to be welcomed, as are some of the efforts that have been made in this sphere. However, as is true in most industrial countries, the problems that remain are considerable; their solution will require careful planning, innovative regulations, and strict enforcement of the law.

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(46) Trybuna Ludu, 29 January 1970.

(47) E.g., Trybuna Ludu, 22 February 1972, and Argumenty, 30 January 1972.