

# POLICY

# BRIEF

The Environmental and Natural Resources Policy and Training Project

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## Environmental Protection and Economic Reform in Russia

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Major environmental disasters in Russia, such as Chernobyl, are infamous.<sup>1</sup> There is widespread belief that environmental protection was of little importance in social and economic management in the former USSR.<sup>2</sup> While this has been common knowledge for years,<sup>3</sup> the complete picture of environmental neglect is only now emerging.

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**Only now, with the collapse of the USSR, is an accurate picture of the Soviet economy emerging.**

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Of course, in many ways, the same is true of the state of the economy in the former USSR. In the 1970s, some perceived the Soviet economy to be

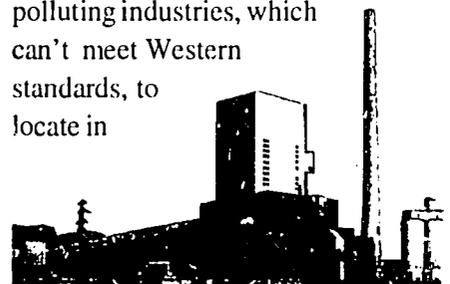
growing faster than American or other Western economies. Only now, with the collapse of the USSR, is an accurate picture of the Soviet economy emerging. The reliance on central planning and the disdain for prices as signals of scarcity have resulted in deep structural problems. Current governments in the former republics of the USSR are having a great deal of difficulty solving these problems.

Of necessity, environmental reform must go hand-in-hand with economic reform. In the largest republic of the former USSR -- Russia -- economic reform has many facets although there are two primary thrusts: marketization and privatization. Marketization means moving to use decentralized prices, instead of central planning, to direct the economy. Privatization converts state ownership to private ownership. While

difficult to carry out separately, they are interconnected, and governments must pursue them jointly.

You cannot privatize industry without realistic prices, and painful price reform cannot achieve anything if state enterprises do not respond to monetary incentives. Hyperinflation makes everything difficult, and currency stability cannot come without major successes in price reform and privatization. These are big problems. They make painful but more modest Western efforts at economic reform, such as energy deregulation in the USA or British privatization of the telephone system, seem like child's play.

How is environmental protection tied to economic reform? "Green" parties, in Eastern Europe and elsewhere, worry that lax environmental regulations will encourage polluting industries, which can't meet Western standards, to locate in



**Table 1. Stationary Source Air Pollution, USSR & USA, 1987**

Annual Emissions, million tons			
	SO <sub>2</sub>	NO <sub>x</sub>	CO
USSR	18.6	4.5	15.5
USA	17.8	10.3	18.3
Annual Emissions, kg/capita			
	SO <sub>2</sub>	NO <sub>x</sub>	CO
USSR	66	16	55
USA	73	42	75
Emissions/GDP, tons/million\$			
	SO <sub>2</sub>	NO <sub>x</sub>	CO
USSR	14.3	3.5	11.9
USA	3.9	2.3	4.1

Sources:

USA emissions: Executive Office of the President, Council on Environmental Quality. 1991. *Environmental Quality*. Washington, D.C.

USSR emissions: Pryde, Philip R. 1991. *Environmental Management in the Soviet Union*. New York, and Cambridge: Cambridge University Press.

Other USSR statistics: IMF, World Bank, and OECD. 1991. *A Study of the Soviet Economy*. Washington, D.C.: International Monetary Fund, 3 Vols. (assumed official exchange rate \$1= 0.6328 Rubles).

Other USA statistics: World Resources Institute. 1990. *World Resources 1990-91*. New York: Oxford University Press.

Russia and other formerly centrally-planned economies. While this is a real concern, lax environmental regulations may prevent Western firms, who want to uphold their environmental reputations, from entering these countries. In fact, a lack of environmental protection legislation can significantly hold back economic reform, particularly privatization.

Here's how it works. Risk is the greatest barrier to economic investment. It would appear that not having to comply with environmental regulations would be advantageous to

business. But, if investors think that the laws will eventually tighten up, then the lack of environmental policy increases the investment risk. This situation can slow privatization or even stop it for some particularly dirty industries.

## Environmental reform must go hand-in-hand with economic reform.

A simple example illustrates this. Let's say you are considering buying a steel mill that presently is subject to minimal environmental regulation. However, you know that, over the life of your investment, you may incur major costs to meet future strict environmental regulations. If you know the environmental laws before you invest, your risk is much less.

Western firms that operate worldwide may believe that operating factories that meet Russian, but not international, laws risk their reputations too much. However, if they operate their factories to international environmental standards, then it will be hard to compete with more lax counterparts. The upshot is that weak environmental laws can discourage Western firms from investing in the country.

## Weak laws about the environment can discourage Western firms from investing in the country.

## State of the Russian Environment

The environment in any society encompasses much. Here, the term refers to air, land, and water resources that are subject to pollution. Also included are natural resources such as forests and mineral deposits. Russia possesses amazingly vast and rich deposits of natural resources. Not surprisingly, its economy depends on exploiting those natural resources.

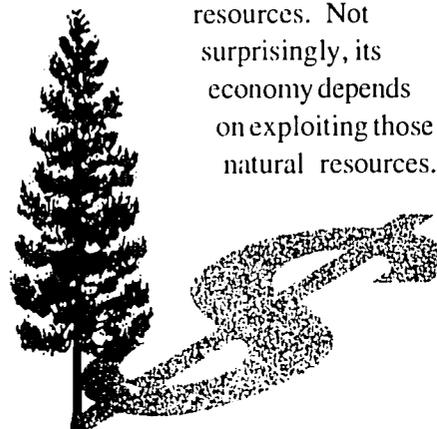


Table 1 shows a snapshot of air pollution in 1987 in the USSR and the USA, excluding automobile emissions. The Table is telling. In many ways, the USSR pollutes at levels comparable to the USA although, on a per capita basis, the USA produces more pollutants. However, per unit of gross domestic product (GDP), the USSR is extremely wasteful in emitting far more pollution per unit of output than the USA. This is probably because pollution follows the use of raw materials, which are underpriced and thus used heavily in Russia.

## Environmental Protection in Russia

### The Past

Despite the current state of the environment in Russia, the country has had environmental regulation for some years.<sup>4</sup> However, for the past

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70 years, the government has planned the economy, dividing it into ministries in charge of specific sectors, for example, the Ministry of Steel. These ministries would oversee production within their specific areas. In effect, these ministries were large monopolies with goals more similar to a conventional monopolist than a government agency balancing diverse public interests.

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## **Underpricing of energy leads to even more air pollution.**

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As a result, people often viewed environmental protection as disruptive, costly, and burdensome. In fact, national ministries tended to concentrate production into a few production facilities, making environmental problems worse. Because the environment can dissipate some pollution, concentrated production is much worse than dispersed production, even if the total amount of pollutants is the same. Ministries intensified the problem by concentrating manufacturing into small “production towns” with many large factories.

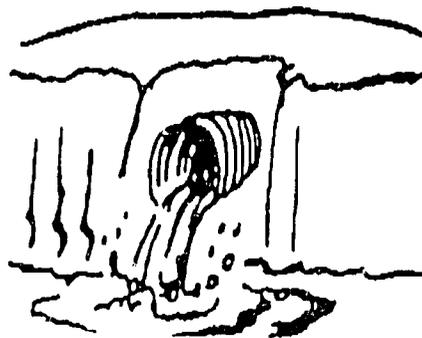
The way that the government planned the economy and generated transfer prices for sales between firms was also detrimental to the environment. Under the labor theory of value, natural resources and other “non-produced” resources, such as environmental quality, have no labor content and thus no value.

Consequently, people use more of them compared to the amount they would use if supply and demand set

the prices. This is apparent from the underpricing of commodities associated with large amounts of pollution, compared to products that are relatively more benign. The labor theory of value also results in overuse of minerals and other natural resources. For example, since most air pollution comes from the combustion of fossil fuels, underpricing of energy leads to even more air pollution.

### **The Recent Past**

While people have been aware of environmental problems for some time, it was not until the late 1970s that Russia made a significantly greater effort to solve these problems.<sup>5</sup> In 1988, the government established the State Committee on Environmental Protection, Goskompiroda, which has now evolved into the Ministry of Environmental Protection and Natural Resources. But, because of the way in which the Russian economy continues to operate, one of the Ministry’s major tasks was to intervene in dispersal of investment funds and in the planning and building of new factories. Together with the State Planning Agency (Gosplan) and the appropriate ministries, Goskompiroda and the Ministry of the Environment sought to assure the right level of investment in pollution control.<sup>6</sup>



Regional and local branches of the Ministry oversaw implementation of centrally devised plans, supervised pollution cleanup, and reviewed the operation of all pollution sources. In fact, Russia delegates environmental management more to local authorities than does the USA, which made an early decision to limit the ability of states and localities to independently develop environmental laws.<sup>7</sup>

### **Experiments with Pollution Fees**

Russia recently tried an innovative approach to environmental protection by using pollution fees. This is an approach to control pollution that Western economists advocate but consider too radically market-oriented to try in leading capitalist countries like the USA. The theory is that if firms must pay a fee based on how much they pollute, then they will have an incentive to pollute less.

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## **Pollution fees can pay for pollution control.**

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Furthermore, if the fee is high enough, it is possible to reduce pollution to any level. And if the fee is equal to the level of incremental environmental damage, it is possible to balance pollution control costs and pollution damage.

In the Russian experiment, the goal was not so much to provide an incentive for firms to reduce pollution. After all, most firms operate with a soft budget constraint, meaning that losing money is not as important as missing a production target. In this situation, a pollution fee has little incentive effect.

**Table 2. Selected Pollution Fees, Rubles Per Ton, January 1991**

	Under Limit	Over Limit
NO <sub>2</sub>	82.50	395.00
NO	55.00	263.39
SO <sub>2</sub>	66.00	316.00
TSP	22.11	105.86
Lead	10,999.89	52,666.14
Benzopyrene	3.3x10 <sup>6</sup>	15.8x10 <sup>6</sup>

Source:  
Freeman, William, verbal translation. 1991. *Decree (Executive Order) of Russia (RFSFR)*, 9 January 1991. Washington, D.C.: U.S. EPA.

Note:  
Exchange rates (January 1991): Tourist, 1 US\$ = 27 Rubles; purchasing power parity involves considerably fewer Rubles to the dollar.

The fee system began in a 1986 law, giving local authorities the power to take monies from enterprises for the use of "certain natural resources." The original and primary purpose of the fee system was to generate money to pay for investment in pollution control.<sup>8</sup> Since the state owned the enterprises, it was logical that it use public money to clean up these firms. Because companies with more emissions paid higher fees, the bigger polluters contributed more to the investment fund. Table 2 shows the typical level of pollution fees in January 1991.<sup>9</sup> While not enormous, the fees are significant. For comparison, sulfur allowances have been trading for \$100-200 per ton in the USA under the 1990 Clean Air Act.

One of the main problems of the pollution fee system was that it was an experiment, and fee payments were voluntary, in practice if not legally.<sup>10</sup> For instance, in Moscow, the electric company Mosenergo, a

major polluter, refused to pay, and nobody could do anything about it. To solve this problem, in 1991, an Executive Order<sup>11</sup> established the fees in Table 2. However, an Executive Order is still short of a law. Enterprises can, and do, go to court to contest the levies, and there is no mechanism to enforce payment. Furthermore, inflation (which has been significant in Russia) is a big problem, requiring frequent revisions of pollution fees for them to be effective.

In December 1991, the government passed a comprehensive environmental law.<sup>12</sup> This law details the responsibilities of the government in overseeing environmental quality. It defines the rights of citizens to protest and even to seek compensatory damage, including pain and suffering, for pollution-related injuries. The law also outlines the right of the authorities to collect emission fees. However, the law is a set of general goals, without enforcement procedures. It does not provide specific rules and penalties for existing and potential polluters.

### **Economic Reform Process**

As mentioned earlier, there are two primary prongs to the economic reform process in Russia: marketization and privatization. The government cannot pursue them separately or even sequentially since the success of one depends on the success of the other.

### **The problems of reforming the Russian economy are overwhelming.**

Marketization requires price, financial, monetary, legal, and fiscal reform. Privatization calls for price reform since value in a market economy has no meaning without rational prices. Price reform will fail without privatization because price increases will not solve shortages of goods if prices send no signal to state managers (as opposed to private managers). The problems of reforming the Russian economy are overwhelming.

### **The attempted price reform is failing.**

The marketization process involves generating the conditions to allow a market to operate with stability. This means setting up the infrastructure necessary for a market, including financial institutions, a legal framework of contracts and property rights, and many other aspects of a market economy that we take for granted. Without these preconditions, a market cannot operate successfully. And without a market that can function, there can be no hope for privatization.

Clearly, part of the marketization process is in installing well-defined environmental laws and regulations. In fact, we can argue that the attempted price reform is failing, mainly from neglect of the institutional aspects of marketization, including reform of environmental laws.

Privatization has been proceeding in Russia for several years, but not by merely auctioning state property although there has been some of that.

So far, most privatization has been "spontaneous." Employees and managers arrange to lease the company's capital from the state, and then eventually buy out the state at favorable terms. Each enterprise negotiates its own arrangements. The government has also tried a variety of other approaches to privatization. President Boris Yeltsin has been issuing decrees on privatization, and, in late 1992, Parliament just began to consider plans for more widespread privatization of state property.

## Environmental Reform in Russia

Uncertainty and risk dominate the economic reform process in Russia. A lack of environmental regulations is contributing in a major way to that uncertainty and risk. Thus, forging a proper environmental regulatory atmosphere will not only better protect the environment but help Russia achieve its difficult economic reform goals.

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## The government is considering both marketable permit systems and command-and-control regulations.

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Russia cannot continue to use many of the environmental regulations in place before reform, particularly after privatization. For instance, under private ownership of capital, the Ministry of the Environment will not be reviewing investment plans for the environmental content. It is unlikely that the government will

collect emission fees from private enterprises and use them to finance private-sector clean-up. Each company will have to be responsible for its own pollution. Unless the government takes active steps, environmental control will actually regress.

Several mechanisms have been discussed, or are beginning to be put in place, to deal with a reformed Russian economy. One is to continue the emission fee program using the fees more as an incentive to reduce pollution than to generate a fund to finance cleanup. Another is liability, outlined in the December 1991 law that holds polluters liable for their sins. It can be a powerful incentive for them to avoid polluting. Unfortunately, liability does not work well for many types of pollutants. This is particularly true when there are many dispersed sources, and it is difficult to identify the specific origin of the emissions causing damage. The government is also considering marketable permit systems<sup>13</sup> and command-and-control regulations.

## Conclusions

Russia urgently needs to reform its environmental regulations to protect the environment. But the call is urgent for two additional, less obvious reasons. One is that environmental regulation inherited from the central planning days will not work in a privatized economy; Russia needs reform just to stand still. The old command-and-control system, while inefficient, did place some restraint on polluters. That system has now disappeared, and the threat to the environment is greater than ever.

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## Russia needs reform just to stand still.

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Second, without a clearly-defined set of environmental regulations, the economic reform process will slow down because it will hinder foreign investment. A lack of regulations will also increase the risk and thus reduce the value of enterprises converting to private ownership. The conclusion is that environmental policy reform in Russia deserves to move to the front of the line. The country cannot deal with it later after solving more urgent problems. Rather it is a primary concern and even a necessary condition for successful economic reform.



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# POLICY BRIEF

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This paper was written in mid-1992. There is much change in Russia so some of what appears here may already be obsolete.

## Notes

<sup>1</sup>See, for example: Feschbach, M. 1992. *Ecocide in the USSR*. New York, New York: Basic Books.

<sup>2</sup>See, for example: Khabibullov, Marat. 1991. "Crisis in Environmental Management of the Soviet Union." *Environmental Management* 15(6):749-63.

<sup>3</sup>See, for example: Goldman, Marshall. 1972. *The Spoils of Progress*. Cambridge, Massachusetts: MIT Press.

<sup>4</sup>See, for example: IMF, World Bank, and OECD. 1991. *A Study of the Soviet Economy*. Washington, D.C.: International Monetary Fund, 3 Vols.

<sup>5</sup>See, for example: Khabibullov, Marat R., Joan T. DeBardeleben, and Arthur B. Sacks. 1991. "New Trends in Soviet Environmental Policy." Field Staff Reports, Europe, No. 1, 1990/91, Universities Field Staff International, Indianapolis, Indiana.

Zaharchenko, Tatiana. 1990. "The Environmental Movement and Ecological Law in the Soviet Union: The Process of Transformation." *Ecology Law Quarterly* 17(3):455-75.

Eberhardt, A. 1990. "A Comparison of New Economic Methods in USSR Environmental Policy with Western Approaches." *Environmental Management* 14(2):151-60.

<sup>6</sup>While this sounds good in theory, in practice, the Ministry of the Environment and Goskompriroda before it often have been weak partners in negotiations over the design of new facilities.

<sup>7</sup>In the USA, reducing local authority was viewed as necessary to avoid competition between localities whereby environmental rules would be relaxed to attract new business.

<sup>8</sup>While the purpose of the fees appeared to be primarily to generate pollution control funds, some attempt was made to estimate the monetary damage from pollution and to set the fees accordingly.

<sup>9</sup>Rampant inflation in Russia has caused significant dilution of these fees, despite several increases.

<sup>10</sup>Although payments were voluntary initially when the fee system was an experiment, they later become nonvoluntary. However, even when mandatory, nonpayment was the norm. Local authorities also had the power to set "temporary" standards, much weaker than the permanent ones.

<sup>11</sup>An Act of the Council of Ministers is distinct from a law passed by the Supreme Soviet. A law is stronger than an act.

<sup>12</sup>RSFSR Law on Environmental Protection, JPRS-TEN-92-007, 15 April 1992 (from Moscow Rossiyskaya Gazeta, 3 March 1992).

<sup>13</sup>Marketable permit systems have been used to a limited extent in the USA, with generally positive results. See, for example: Hahn, Robert W. 1989. "Economic Prescriptions for Environmental Problems: How the Patient Followed the Doctor's Orders." *J. Economic Perspectives* 3:95-114.