

POLICY ALTERNATIVES IN SOVIET ENVIRONMENTAL PROTECTION

by

CHARLES E. ZIEGLER

Paper No. 102
1981

Charles E. Ziegler is Assistant Professor of Political Science at the University of Louisville. He received the Ph.D. in political science from the University of Illinois at Champaign-Urbana, and has published articles on environmental policy and political specialization in Soviet Studies, The International Journal of Political Education, and Studies in Soviet Thought. Dr. Ziegler is currently working on a study of environmental policy in the Soviet Union.

**THE CARL BECK PAPERS IN
RUSSIAN AND EAST EUROPEAN STUDIES
Ronald H. Linden, Editor
4E-23 Forbes Quadrangle
University of Pittsburgh
Pittsburgh, PA
15260**

A number of developments over the past decade or so illustrate the increasing salience of environmental problems for Soviet policy makers. In the mid-1960s, controversy over the potential pollution of Lake Baikal appears to have stimulated and legitimized environmental protection as an issue for discussion in the Soviet press.¹ The output of scholarly books and articles by philosophers, economists, biologists, physicists, and sociologists reflects the broad range of organizations concerned with these questions.² Support is also evident in high places-Brezhnev's report to the 25th Party Congress in 1976 emphasized the importance of environmental protection and announced that 11 billion rubles would be allocated for the purpose during the tenth five-year plan.³ N.K. Baibakov, Chairman of the State Planning Committee recently outlined planned capital investments of 1.8 billion rubles for the implementation of environmental protection measures in 1981.⁴ Greater organizational commitment is evident in the elevation of the former Hydrometeorology Service attached to the Council of Ministers to a State Committee on Hydrometeorology and Oversight of the Environment. The committee's director, Dr. Iu. Izrael, claimed his organization had approximately 10,000 personnel working on environmental problems as of early 1979.⁵

Despite the considerable support for environmental protection evidenced in budgetary allocations, press coverage, scientific research and bureaucratic reorganization, Soviet policy makers appear to be uncertain about the precise form environmental policy should assume. Uncertainty regarding an environmental solution is closely tied to the broader problem of economic reform in the Soviet Union.⁶ Constraints on labor and capital resources have slowed extensive economic growth in the past two decades, resulting in programs and pronouncements designed to achieve more efficient use of extant resources. The programs of the last two Party Congresses reflect the determination

to stimulate intensive economic growth through technology and efficient management practices. Economic reform has been accepted in principle by the Soviet leadership, although there is substantial disagreement over the actual measures to be adopted.⁷

In an attempt to stimulate greater efficiency in utilizing natural resources, labor and capital, leaders at the highest level have urged the use of economic levers and incentives in place of administrative actions.⁸ With the encouragement and legitimacy conferred by such pronouncements, a number of Soviet economists have advanced innovative proposals embodying market or other economic incentives to environmental protection. This paper examines the alternative approaches to environmental policy problems-economic and administrative-available to Soviet policy makers. The approach adopted, in the form of national environmental legislation enacted, gives some indication of the capacity of the Soviet system to entertain new ideas and incorporate them into public policy.

The first section of this paper describes some of the more innovative, non-incremental solutions to environmental pollution advanced by Soviet economists. The second part outlines the actual response of the Soviet government to pollution problems, which consists largely of incremental administrative arrangements. Several of the more important environmental laws will be reviewed in this section. The concluding section makes some general observations about the openness of environmental policy debate in the USSR, and the selection and implementation of alternative environmental strategies.

POLICY ALTERNATIVES: ECONOMIC INCENTIVES AND DISINCENTIVES

As Charles Lindblom has observed, "communist systems rely on authority

far more than do the market-oriented polyarchies."⁹ Soviet leaders use some market mechanisms (to allocate labor, for example), but they prefer to exercise control through authority rather than through exchange. The willingness to experiment with and use market mechanisms has increased in the post-Stalin era; this is, of course, a primary aspect of Soviet "liberalization" during this period.

Previous research indicated that private ownership of natural resources is the only major economic incentive decisively rejected by Soviet decision makers.¹⁰ Virtually all other types of economic incentives would appear to be ideologically acceptable. Since the mid-1960s Soviet economists have proposed a variety of economic solutions to environmental problems. One category of solutions attempts to force polluters to internalize external costs generated in the production process. To the extent that economic levers have become part of policy, the governmental response has been to adopt a second broad division of economic incentives--paying polluters to stop polluting.

Paying Polluters

Prior to 1975 the Soviet government expected polluting enterprises and organizations to pay for environmental protection measures using money from the enterprise development fund. The fund is a sum of money set aside for capital investment, and for enterprises to make improvements in organization and production techniques. The effectiveness of the fund in raising efficiency has been weakened by the small size of the fund and by overly centralized control through the ministry.¹¹ Ministry officials are reluctant to invest in projects which may tend to reduce overall output or which incur continuing costs. Measures aimed at preventing waste or purifying discharges do both. By 1975, the national economic plan did include specific budgetary

allocations for preventing pollution, mandating the expenditure of funds.¹²

If enterprise directors did not use monies from the fund, they were expected to divert part of their general budget to pay for the construction of purification facilities, to restore strip-mined land, etc. Directors were understandably reluctant to jeopardize plan fulfillment by shifting resources away from "productive" activities. Success and failure in the Soviet system of central planning are based largely on physical output. Additional criteria have been added since the 1965 economic reforms, but the quantitative indicator retains its position of primary importance.¹³ The rational enterprise director will devote all available resources to maximizing production of the limited number of products, since their output constitutes his major criterion of success. Salary bonuses, recognition and promotion are contingent upon these criteria.

The bonus system is a form of economic incentive that has become institutionalized in the Soviet system. Logically, in a system where the productive resources are owned and operated by the state, bonuses awarded to individuals should be greatest in the sectors having the highest priority. There is empirical evidence that such a correlation does exist in the Soviet Union.¹⁴ The largest bonuses go to the military and intelligence sectors, then heavy industry, and finally light industry. To the present time, bonuses have not been awarded for successes in environmental protection efforts, although Soviet authors have suggested the adoption of this practice.¹⁵

Although bonuses are not awarded for protecting the environment, they may be denied for failure to comply with environmental directives. A 1979 resolution of the State Committee on Labor and Social Questions and the Central Council of Trade Unions stipulated that executive personnel of organizations and enterprises failing to implement environmental plans and measures would

forfeit a minimum of 25 percent of whatever bonus they had earned. This applies to factory managers, heads of urban services organizations, their deputies and chief engineers. If these individuals violate state plans for the national economy they may lose the full amount of any earned bonus.¹⁶ Since bonuses often amount to one-third or even one-half of managerial salaries, this could be a significant incentive if applied consistently.

The incorporation of environmental protection into the state plan in 1975 was one indication of the increasing importance of this policy area for the Soviet leadership. This change in policy was partly symbolic and partly functional. Symbolically, the official status of environmental protection was elevated from a local or regional matter to a position of national importance. It reinforced the earlier national commitment symbolized in the September 1975 session of the Supreme Soviet on conservation and the environment.

Functionally, specific sums were to be allocated and spent for the protection of air and water. Theoretically, enterprises and organizations would no longer be expected to pay for equipment and maintenance costs out of the basic fund. In recent years, however, directors have been pressured by the Kremlin to use money from the basic fund for environmental protection. Furthermore, the amounts allocated for environmental protection are apparently insufficient, given the weakness of the present infrastructure when compared with what is needed for a successful policy. Serious pollution violations often occur because obsolete factories and plants cannot utilize modern abatement equipment.¹⁷

Capital investment in environmental protection grew rapidly in the two years following the 1972 Supreme Soviet session, peaked in 1975, declined over the next two years, then rebounded slightly. Table One indicates the

pattern of national expenditures. Brezhnev announced that 11 billion rubles would be spent for environmental protection in the course of the Tenth Five Year Plan.¹⁸ The data presented in Table One suggests that unless expenditures increased drastically in 1980, just under two billion rubles remained unspent.

Originally, plans had provided for expenditures of 5.8 billion rubles in 1976-1978, including 4.7 billion for construction and installation.¹⁹ Several union republics--the Russian Soviet Federated Socialist Republic, Georgia, and Byelorussia--failed to allocate the full amount of capital investment. The USSR Ministry of Coal Industry and the USSR Ministry of Ferrous Metallurgy also did not spend the full amounts allocated to them in the plan.²⁰

How can we explain these failures to utilize the full amounts allocated? The source of the problem may be found in the balance of economic priorities existing in the Soviet system of central economic planning. A certain sum may be allocated, say, for the construction of purification installations, but construction enterprises must first fulfill their assignments for priority projects.²¹ At present there is only one organization, the All-Union Gas Purification and Dust Trapping Association, whose sole task is the production and distribution of anti-pollution equipment. Created nearly four decades ago, the Association was assigned to the USSR Ministry of Chemical and Petroleum Machine Building Industry by the Supreme Soviet in 1972. Earlier reports indicated that the Association was unable to meet the demand for air pollution equipment,²² but its performance has improved in recent years.²³

No such organization exists to manufacture equipment for treating effluent discharged into waterways. Several institutes carry out basic research on water pollution and purification equipment, such as the All-Union Research Institute for Water Supply, Sewage and Hydrological Engineering Equipment.²⁴

TABLE I

State Capital Investments in Measures for the Protection and Rational Utilization
of Natural Resources (in comparable prices, millions of rubles)

	1968-70	1971-72	1973	1974	1975	1976	1977	1978-79	1976-79
Total (USSR)	1200	857	1143	1528	2084	1887	1783	3813	7383
Water Resources	--	--	917	1242	1383	1430	1390	2865	5685
Atmospheric Basins	--	--	116	152	154	183	172	332	687

Source: Narodnoe khoziaistvo SSSR v 1977g: statisticheskii ezhegodnik (Moscow: Statistika, 1978), pp. 348, 445; Narkhoz 1979, p. 445.

Construction is generally the responsibility of the relevant construction ministry.

In sum, the construction and installation of purification facilities is a low-priority item for virtually all organizations within the economic bureaucracy. These organizations have higher-order tasks that require time and attention; and environmental protection is strictly secondary as an organizational goal. It does not "pay" for an enterprise to devote the 20-30 percent of its basic fund that is often necessary to purify effluents adequately.²⁵ The easiest solution is simply not to make use of the limited funds that have been allocated.²⁶

The Polluter Pays

The second broad range of alternatives involving economic incentives assumes that polluters should pay the social costs incurred through production. The theoretical framework on which this assumption is based has been developed by Western economists within the context of market economies. As I will demonstrate shortly, these principles of economic theory are also applicable to the command economy.

Theoretically, pollution and resource waste occur when the market mechanism fails to produce an accurate valuation of natural resources. If it is possible to better the lot of at least one member of society without diminishing the well-being of any other member, then resources are being used inefficiently. Resource allocation, in economists' terms, has fallen short of Pareto optimality. The Pareto optimum is the theoretical point at which all productive resources are utilized (and valued) just equal to their most valuable alternative use. This alternative value, or opportunity cost, is determined through supply and demand in a competitive market economy. Since the value of all resources is maximized, social welfare is maximized and

resource "waste" (inefficient use or pollution) reduced to a minimum.²⁷

In practice, environmental resources are often undervalued because they are not exchanged through the market. These resources have opportunity costs, although the opportunity costs are not reflected in the market price. Thus, firms using the undervalued resources pay only part of the cost. The remainder "spills over" into other sectors in the form of technical or physical effects. Economists refer to these phenomena as technological external diseconomies.²⁸

Official Soviet doctrine maintains that the elimination of private capital confers a systemic environmental advantage on the USSR by eliminating external diseconomies.²⁹ Most Soviet writers, however, acknowledge the existence of tensions and contradictions between national priorities and the interests of ministries, departments, and enterprises.³⁰ One writer candidly argued that "national economic altruism cannot be a realistic basis for branch economic policies."³¹ Symbolic appeals to promote the general welfare were acknowledged to be ineffective. The solution he proposed, however, involved an increased role for central planning and coordination rather than using economic incentives.

Other Soviet economists have advocated schemes that would force enterprises to absorb some or all of the external costs incurred in production.³² One of the first, V. Shkatov, suggested the adoption of differential rents determined by a scale of cadastre (an official register of land or natural resources) prices for natural resources. The cadastre would indicate the quantity and value of natural resources such as land, oil, and mineral deposits, and would take into account the location and transportation costs of these resources.³³ Users of natural resources would pay for them according to a system of "polar prices." Under conditions of maximum ease of extraction,

transportation, and value, enterprises would pay a positive sum. Under difficult conditions enterprises would receive a payment from the state, and under average conditions the price for resources would be zero.³⁴

Application of this system of polar prices to the use of natural resources would partly compensate for the inefficient exploitation of resources encouraged by the absence of fixed costs for extraction firms.³⁵ Shkatov suggested that the principle of polarity could also be applied to effluents. The release of one cubic meter of heavily polluted water, for example, might result in a charge of three kopeks subtracted from profits or from the basic fund. Conversely, a premium of two kopeks could be paid to the enterprise per cubic meter of fully cleaned waste water.³⁶

Other Soviet economists have argued that pollution problems exist because the principles of economic accountability do not apply to pollution control. A record is kept of the outlays provided for environmental protection, but there is no mechanism for measuring success in terms of actual results. The authors of an article in Voprosy ekonomiki in 1972 suggested imposing a pollution charge on enterprises to induce adoption of a least-cost approach to pollution.³⁷ N. G. Feitelman, writing in the same journal six years later, also supported the idea of an environmental pollution charge factored into the unit costs of production.³⁸ Feitelman stressed the need for an economic valuation of natural resources--he specifically mentioned the possibility of allowing enterprises to sell incidental resources not provided for in the plan--and urged that fines be revised to reflect external costs more accurately.³⁹

Enterprises and associations may sell valuable by-products to other enterprises and keep the income for themselves. The red tape involved in obtaining departmental and ministerial approval for such an exchange can be

overwhelming, though. Komarov relates the case of a chemical plant in Krasnoyiarsk territory which attempted to sell the valuable fluorine it was pumping into the atmosphere. Both the seller and potential buyer were departments within the same Ministry of Chemical Industry. Nevertheless, the Krasnoyiarsk plant continued to pollute the atmosphere with fluorine for over five years until final approval was granted.⁴⁰

As industrialization spreads throughout the world accompanied by the increasing consumption of fossil fuels, policy makers are finally realizing that even the earth's atmosphere is a limited resource, though renewable to a point. The concept of selling rights to use increments of atmospheric resources has recently gained acceptance among U.S. policy makers, and has been implemented by a number of states.⁴¹ In the Soviet Union, no such charge for the use of air as a "dumping ground" has been implemented in any systematic way, and charges for the use of water have only been introduced experimentally. The present policy toward water usage involves supplying the user with water free of charge, or requiring the user to pay a minimal fee to the state.⁴²

The practice of fining enterprises and enterprise directors for violations of environmental laws is another means of forcing the polluter to bear the costs. However, fines are generally very low. Inspectors of the Sanitary Epidemiological Service may fine individuals 50 to 100 rubles, and an enterprise 500 rubles. Smaller fines may be imposed by the chief sanitary physician.⁴³ Soviet officials have complained about the

. . . erroneous and incomplete application of fines and compensations for damages and low efficiency of credit and financing system stimulation . . . Analysis of the data on efficiency of fines for discharge of untreated or insufficiently treated effluents into streams and/or water bodies

has demonstrated that the sums of fines per one violation are much lower than the cost of harmful effects inflicted on the national economy.⁴⁴

In the mid-1970s, a document was drawn up for the economic valuation of natural resources entitled "Basic Regulations on Methods for the Economic Valuation of National Resources in Large-Scale Plan and Design Calculations." It was reported that a number of branches had begun to implement these regulations by 1975,⁴⁵ but later publications indicate that the intent of this document was never fully realized.⁴⁶ Wasteful use of cheap or free natural resources lowers unit costs for enterprises and raises profits.⁴⁷ The overall effect is to subsidize firms that waste resources while economically penalizing firms which adopt stringent environmental standards.

Economic concepts of opportunity costs and externalities can be applied to both market and command economies. If prices are viewed in the generic sense of "terms on which alternatives are offered" rather than simply as exchange ratios in a market, accounting prices or provisional valuations may be established in a non-market economy for the purpose of allocating resources.⁴⁸ Soviet economists have almost uniformly supported the concept of an economic valuation of natural resources to reflect their most valuable alternative uses. These same economists recognize that externalities exist in the Soviet socialist economy. They locate the source of these external costs in the functional divisions of the ministerial system, which suggests that externalities result from the distribution of organization rather than the distribution of property. The implication is clear-administrative reorganization is needed to realize the effectiveness of economic approaches. In the following section Soviet administrative organization is analyzed as it relates to environmental protection.

ADMINISTRATIVE ORGANIZATION: INCREMENTALIST SOLUTIONS

Soviet national environmental legislation is based on the premise that adequate institutional mechanisms exist for enforcing environmental protection. An important 1973 joint resolution of the Central Committee and the Council of Ministers instructed the Union Republic Central Committees and Councils of Ministers, the area (krai) and regional (oblast) Party committees, the autonomous republic Councils of Ministers, area and regional executive committees, and USSR ministries and departments to intensify supervision and to establish systematic control over the implementation of environmental protection measures.⁴⁹ The Hydrometeorological Service, an organization attached to the Council of Ministers, was instructed to organize a nationwide monitoring and control system for levels of air, water, and soil pollution. The USSR State Committee for Science and Technology was given the responsibility for coordinating research on conservation and the rational utilization of natural resources. A Chief Administration for the Development and Production of Gas-Purifying and Dust-Trapping Equipment was formed under the aegis of the USSR Ministry of Chemistry and Petroleum Machine Building for supervising the operation of purification equipment.⁵⁰

A 1978 resolution of the CPSU Central Committee and the USSR Council of Ministers went further toward centralizing environmental protection than any previous legislation, yet it did not vest control in a single superagency as many environmentalists had suggested.⁵¹ The most notable change was the elevation of the Main Hydrometeorological Service to a State Committee on Hydrometeorology and the Environment (Gosudarstvennyi Komitet po Gidrometeorologii i Kontroliu Prirodnoi Sredy, or "Gidromet" in Soviet parlance), currently headed by Dr. Iuri Izrael.⁵²

By making this agency a state committee, the Soviet leaders have granted it autonomy from the ministerial system (Gidromet was formerly under the control of the Ministry of Health). The function of state committees, such as the People's Control Committee (KNK) and the better known Committee for State Security (KGB), is to provide the USSR Council of Ministers with a means of control over the entire ministerial structure. The new responsibilities of the State Committee for Hydrometeorology and the Environment were to organize a monitoring system for the natural environment, regulate air use in urban and industrial centers, to draft and monitor norms for permissible levels of air pollution, and to monitor the siting of facilities in order to prevent atmospheric pollution. The new state committee was furthermore

given the right to check on the observance by enterprises, institutions, organizations, construction projects and other facilities, regardless of their departmental affiliation, of norms and rules in the field of atmospheric protection, and also to submit proposals on suspending the operation of industrial facilities that are violating established norms until the necessary measures have been carried out.⁵³

But the law also vested supervisory powers over the fulfillment of state plan assignments in several ministries in addition to Gidromet--the Ministry of Land Reclamation and Water Resources, the Ministry of Agriculture, and the Council of Ministers' Committee for the Supervision of Industrial Supervision and Mine Safety.⁵⁴

It should also be noted that Gidromet was primarily assigned responsibility for air pollution. Primary responsibility for water pollution remains with the Sanitary Epidemiological Service of the Ministry of Health, although this responsibility is shared with the Ministry of Land Reclamation and Water

Resources, the Ministry of Agriculture, the Ministry of Fish Industry and others. Similarly, the duties of protecting forest resources and the soil are divided among several ministries and agencies. In sum, although there has been limited movement toward centralization of environmental protection, responsibility remains divided among a substantial number of organizations.

In addition to the two joint resolutions discussed above there have been six major environmental laws adopted in the past decade. These are the Principles of Water Legislation (1970), Principles of Land Use (1968), Principles of Mineral Legislation (1975), Principles of Forestry Legislation (1977), and the laws on air quality and the animal world (1980).⁵⁵

These legislative enactments are remarkably similar in structure and emphasis. State ownership is proclaimed as the basis for utilizing the natural resources in question. The legislative goals stated include both the protection and preservation of these resources, combined with their most efficient and complete exploitation.

Water use in the USSR is free of charge in most cases (subject to a fee in special instances), and water use is available to state cooperative, and public organizations, enterprises and institutions, and citizens. Users have the right to use water only for the purposes for which it has been granted, they must utilize water rationally and are obligated to take steps toward the complete cessation of pollutant discharge into bodies of water. Protection of water quality and conservation of water constitute the obligations of enterprises, organizations and institutions using water. Regulation is coordinated with the relevant agencies, the executive committees of local soviets, and in certain cases specially empowered state agencies. Violators of USSR and Union Republic water legislation are criminally or administratively liable in accordance with the relevant legislation. Users are not required to make

restitution to the state for losses.⁵⁶

Use of the earth's interior is assigned free of charge, aside from special instances established by the USSR Council of Ministers, to state, cooperative and public organizations, institutions and enterprises, and citizens. Because of the nonrenewable nature of mineral resources, the legislation stipulates that utilization must be scientifically substantiated and rational. Users are responsible for the fullest possible recovery of minerals and for preventing pollution of the earth's interior. In actuality, mineral resources are often under-utilized because of the low fixed costs of extraction. A mining concern subject to diminishing marginal returns at one location need not worry about absorbing the fixed costs of purchasing a new site, since land is a free good.⁵⁷ Furthermore, the enterprise pays only about 40% of the geological prospecting costs; the state picks up the rest.⁵⁸ Both factors provide an incentive to waste natural resources. On the conservation side, enterprises which have higher rates of return due to favorable conditions are subject to higher turnover taxes.⁵⁹ This is similar in effect to Shkatov's system of polar prices discussed above. Violations of mineral legislation may incur criminal, administrative, or other liability in accordance with USSR and Union Republic legislation. The "other" liability mentioned here apparently refers to material restitution. Enterprises, organizations, institutions and individuals (officials and other personnel) are held materially liable, in Article 50, for violations.⁶⁰ Supervision over the use of the earth's interior is exercised by the relevant agencies, the soviets and their administrative and executive agencies, with the assistance of public organizations whenever possible.

Of the six pieces of legislation, only the "Principles of Forest Legislation" embodies a charge for the use of a natural resource. Standing timber

is allocated through payment of a fee based on fixed rates. At least one Soviet writer has complained that the rate per tree does not fully reflect timber value.⁶¹ Nevertheless, instituting a fixed charge for a resource represents a new departure for Soviet policy. Although it is going too far to argue that this clearly signals a rethinking of the form of Soviet environmental policy, there does appear to be a chronological progression toward greater use of economic incentives.

Forest users may be state, cooperative and public enterprises, organizations, and institutions, and individual citizens. They may use forest resources only according to the authorization granted them by the state. Forest users are required to make the fullest and most rational possible use of timber, must clean up timber-cutting areas and recondition exploited land areas at their own expense. As with the use of mineral resources, actual Soviet timbering has been incredibly wasteful. Thousands of tons of lumber rot each year because of inadequate storage and transportation.⁶²

In the case of land use, usufruct is granted free of charge to collective and state farms, industrial and public organizations, and citizens. Land users are obliged to use the land rationally, to protect and improve soil fertility, and to take the necessary steps against erosion and contamination. State control over land use is exercised by the Soviets and their executive and administrative organs, and by the relevant state agencies. Violators of the land legislation are subject to criminal or administrative liability in accordance with USSR or Union Republic legislation. In addition, enterprises, institutions, organizations and citizens are obligated to compensate the state for any damage caused from violations of the legislation.

Efficient land use in the Soviet Union is hindered by the same factors that preclude the most efficient exploitation of mineral resources. These

include a fragmented bureaucratic approach to land utilization and the absence of scarcity prices. According to one student of Soviet land use policy, the task of assigning more rational values to land use received increased attention in the late 1970s.⁶³

The laws on air quality and animal protection both went into effect January 1, 1981. The air quality legislation contains a small article empowering the Union Republics (and the USSR) to establish material and moral incentives for implementing the laws.⁶⁴ Violators of air quality legislation are obligated to make recompense for any damages caused through air pollution. Aside from these modest provisions, the legislation relies on administrative arrangements to achieve compliance. It should be pointed out, however, that the administrative procedures and penalties are considerably more sophisticated and far-reaching than earlier legislation.⁶⁵

The use of the animal world is assigned free of charge, although USSR and Union Republic legislation may establish charges for the use of animal resources.⁶⁶ Compensation for damages may be required of users, but the evidence suggests that poachers generally are not subject to large fines. In any case, those guilty of poaching tend to come from the ranks of the privileged. They are more likely to avoid paying fines through their connections and influence.⁶⁷

CONCLUSION

The economic alternatives discussed in this paper appear to merit serious consideration by Soviet policy makers-they all fall within the parameters of acceptability of the system.⁶⁸ Soviet leaders are willing to have a variety of alternate strategies proposed and discussed in the official press, though few of the economic solutions proposed for solving environmental problems have actually been implemented. The willingness to entertain and on occasion experiment with alternate strategies indicates a certain flexibility on the part of the Soviet leadership. Flexibility at the top levels of the Party and government, however, may be frustrated by the bureaucratic intransigence of local Party and state organizations.⁶⁹ Central decision makers are constrained in their selection and evaluation of alternatives as a result of certain pathologies in the structure of the Soviet command economy. For example, policy makers often receive distorted information on environmental performance through the ministerial structure, or find that ministries and departments conveniently disregard environmental regulations.⁷⁰

These findings should not surprise students of Soviet politics, or students of administrative organization. The complex of penalties and rewards found in the Soviet planned economy reflect the "bias" of that system toward production rather than environmental protection. The commitment of the Soviet leadership to environmental protection, although substantial, is obviously secondary to the commitment to industrial development. Viewed from this perspective, bureaucratic obstructionism is eminently rational, for it serves the interests of both the organizations and the individual members. Plans are fulfilled, deadlines met, bonuses earned. The implementation of environmental protection measures may in most cases be delayed in deference to more immediate

and more crucial goals.

Given the inability of the Soviet leadership to agree on a specific approach to environmental problems, as suggested by the vague, general character of the earlier environmental legislation, this policy arena has been opened to input by such groups as the environmental economists.⁷¹ Open debate means accessibility, but it also means competition with the established bureaucratic interests in the ministerial structure. In the Soviet Union, the key political resource is organization. Soviet reformers may have complete access to the press and the top leadership, but they do not have the organizational resources which would enable them to compete effectively with the economic bureaucracy.

The result, in terms of policy outputs, is at best an incremental process of change. Over time, a series of incremental changes may yield major differences in policies. The new air quality law, for example, is a fairly sophisticated piece of legislation incorporating effective administrative regulations (such as the maximum permissible emissions standards). This law, which will be implemented primarily through a newly empowered state committee (Gidromet), could go far toward reducing air pollution in the Soviet Union. Much will depend on the resistance of polluting organizations to the new regulations, and on the extent of the powers granted to Gidromet. At the time of this writing, it is too early to ascertain the scope of Gidromet's authority to regulate pollution violators. The future of this organization should provide a valuable clue about the effectiveness of Soviet environmental protection efforts.

NOTES

¹ For a more complete discussion of the Baikal controversy, see Marshall I. Goldman, The Spoils of Progress: Environmental Pollution in the Soviet Union (Cambridge: MIT Press, 1972), pp. 178-209; and Craig ZumBrunnen, "The Lake Baikal Controversy: A Serious Water Pollution Threat or a Turning Point in Soviet Environmental Consciousness," in Ivan Volgyes, ed., Environmental Deterioration in the Soviet Union and Eastern Europe (New York: Praeger, 1974).

² Okhrana okruzhaiushchei sredy: bibliograficheskii ukazatel osnovnykh otechestvennykh izdaniy za 1965-1977 gg. (Leningrad: Akademii Nauk SSSR, 1979).

³ L. I. Brezhnev, "The Report to the CPSU Central Committee and the Party's Immediate Tasks in the Fields of Domestic and Foreign Policy," trans. in the Current Digest of the Soviet Press, Vol. 28, No. 8 (March 24, 1976), pp. 17-18.

⁴ Pravda (October 23, 1980), p. 3.

⁵ Christian Science Monitor (February 7, 1979), p. 3.

⁶ For a more extended discussion of this, see Charles Edward Ziegler, "Disaggregated Pluralism in a Socialist System: Environmental Policy in the USSR," Ph.D. dissertation (Urbana, Illinois: University of Illinois, 1979).

⁷ See Jerry F. Hough, Soviet Leadership in Transition (Washington, D.C.: The Brookings Institution, 1980), pp. 131-49.

⁸ See Brezhnev's report to the 25th Party Congress, p. 23.

⁹ Charles E. Lindblom, Politics and Markets (New York: Basic Books, 1977), p. 239.

¹⁰ Charles E. Ziegler, "Soviet Environmental Policy Parameters: The Macro Value Framework", forthcoming in Studies in Soviet Thought.

¹¹ See Alex Nove, The Soviet Economic System (London: George Allen & Unwin, 1977), pp. 188-90; and George R. Feiwel with the assistance of Ida Feiwel, "Economic Performance and Reforms in the Soviet Union," in Donald R. Kelley, ed., Soviet Politics in the Brezhnev Era (New York: Praeger, 1980), pp. 79-80.

¹² Izvestiia, December 5, 1974, pp. 1-2.

¹³ For a collection of articles and official materials on the economic reforms, see Khoziaistvennaia reforma v SSSR (Moscow: Pravda, 1969). For an English-language treatment, see Karl W. Ryavec, Implementation of Soviet Economic Reforms: Political, Organizational, and Social Processes (New York: Praeger, 1975).

¹⁴ See Mervyn Matthews, Privilege in the Soviet Union: A Study of Elite Life-Styles under Communism (London: Allen and Unwin, 1978), p. 24.

¹⁵ See, for example, V. E. Bakaev, "Stimulirovanie ekonomiiu vody," Ekonomika i organizatsiia promyshlennogo proizvodstva, No. 4 (July-August 1977), pp. 182-83.

¹⁶ "To Protect Nature," Ekonomicheskaiia gazeta, No. 42 (October 1979), p. 22, trans. in Current Digest of the Soviet Press, Vol. 31, No. 42 (November 14, 1979), p. 20.

¹⁷ See Pravda (June 17, 1975), p. 3; M. Podgorodnikov and V. Travinskii, "Konflikt na beregu reki," Literaturnaia gazeta, No. 4 (January 23, 1974), p. 11.

¹⁸ Brezhnev mentioned this amount in his speech to the 25th Party Congress. See his "Report of the CPSU Central Committee...". He added that ". . . the trend towards increasing these allocations will continue".

¹⁹ P. Poletaeva, "Delo vazhnosti gosudarstvennoi," Ekonomicheskaiia gazeta, No. 6 (February 1979), p. 16.

²⁰ Ibid.

²¹ See M. Podgorodnikov and V. Travinskii, op. cit.

²² Pravda, March 24, 1969, p. 3.

²³ The Deputy Director of the Gas-Purification Administration of the Ministry of Chemical and Machine Building Industry recently reported that the output of gas purification equipment had increased by 2.5 times in the period 1975-1978. See Iu. Krovitskii, "Po dolgosrochnoi programme," Ekonomicheskaiia gazeta, No. 18 (April 1978), p. 17.

²⁴ Philip R. Pryde, Conservation in the Soviet Union (London: Cambridge University Press, 1972), p. 137.

²⁵ T. Khachaturov, "Ekonomicheskie problemy ekologii," Voprosy ekonomiki, No. 6 (June 1968), p. 13.

²⁶ See Izvestiia, March 2, 1973, p. 3; Izvestiia, June 18, 1975, p. 5.

²⁷ Francis M. Bator, "The Anatomy of Market Failure," The Quarterly Journal of Economics (August 1958), pp. 457-76.

²⁸ For an elaboration of these concepts, see Kneese and Bower, op. cit.; A. Myrick Freeman III, Robert H. Haveman, Allen V. Kneese, The Economics of Environmental Policy (New York: John Wiley and Sons, 1973); Allen V. Kneese, Economics and the Environment (Middlesex: Penguin, 1977).

²⁹ "Krugli stol Voprosy filosofii: Chelovek i sreda ego obitaniia," Voprosy filosofii, No. 1 (1973), pp. 48-60; "Protecting the Environment," World Marxist Review, Vol. 15, No. 6 (June 1972), pp. 16-49.

³⁰ V. N. Leksin, "Narodnokhoziaistvennaia effektivnost' i interesy otrasli," Ekonomika i organizatsiia promyshlennogo proizvodstva, No. 4 (1977), pp. 56-63.

³¹ Ibid., p. 61.

³² We must realize that an accurate valuation of all external costs would be extremely difficult and subject to widely varying interpretations

of "value." The reason for this is the market failure mentioned earlier. Since market processes do not apply to most environmental exchanges, the opportunity costs of environmental resources cannot be calculated.

³³ The USSR Council of Ministers adopted a resolution in 1977 ordering the Ministry of Agriculture and the Union Republic Councils of Ministers to conduct a State Land Cadastre. See Izvestiia (July 1, 1977), p. 2.

³⁴ V. Shkatov, "Tseny na prirodnye bogatstva i sovershenstvovanie planovogo tsenobrazovaniia," Voprosy ekonomiki, No. 9 (September 1968), pp. 67-77. An earlier version of Shkatov's argument was published in Pravda (September 1, 1964), p. 2.

³⁵ See Marshall I. Goldman, op. cit., pp. 46-52.

³⁶ Shkatov, op. cit., p. 77

³⁷ N. Federenko and K. Gofman, "Problems of Optimization in the Planning and Control of Environment," Voprosy ekonomiki, No. 10 (October 1972), pp. 38-46, trans. in Soviet Review, Vol. 24, No. 2 (Summer 1973), pp. 24-38.

³⁸ N. G. Feitelman, "Sotsial'no--ekonomicheskie problemy ekologicheskogo ravnovesiia v zapadnoi sibirii," Voprosy ekonomiki, No. 10 (October 1978), pp. 11-18.

³⁹ Ibid.

⁴⁰ Boris Komarov (pseud.), The Destruction of Nature in the Soviet Union (White Plains, New York: M. E. Sharpe, 1980), pp. 92-93.

⁴¹ See the Federal Register, Vol. 43, No. 118 (June 19, 1978), p. 26381.

⁴² R. Lozhansky, A. K. Kuzin, I. D. Pichakhchi, "On Role of Administrative, Economic, and Technological Measures in Protection of Surface and Subterranean Water against Contamination and Depletion," United Nations Water Conference, Mar del Plata, Argentina, March 14-25, 1977, p. 10.

⁴³ Donald R. Kelley, et. al., The Economic Superpowers and the Environment, (San Francisco: W. H. Freeman, 1976), p. 172.

44 Statement by V. R. Lozhansky, Director of the All-Union Scientific Research Institute for Protection of Waters, op. cit.

45 V. Zhamin, "Ekologiya i ekonomika," Voprosy ekonomiki, No. 7 (July 1975), pp. 91-101. The author does not identify the compilers of this document. The Central Mathematical Economics Institute, however, has been researching questions of resource valuation since 1974.

46 See Feitelman, op. cit., and Lozhansky, op. cit.

47 Iu. Typytsia, "Ekologicheskie faktory v izderzhkakh proizvodstva," Voprosy ekonomiki, No. 7 (July 1977), pp. 116-121.

48 Oscar Lange and Fred M. Taylor, On the Economic Theory of Socialism (New York: McGraw-Hill, 1966), pp. 11-12.

49 Pravda, January 10, 1973, p. 1, trans. in Current Digest of the Soviet Press, Vol. 25, No. 2 (February 7, 1973), pp. 4-6.

50 Ibid.

51 "On Historical Measures to Intensify Conservation and Improve the Utilization of Natural Resources," Pravda, January 6, 1979, p. 1, trans. in Current Digest of the Soviet Press, Vol. 31, No. 1 (January 31, 1979), pp. 1-3.

52 The original announcement of this change was carried in Pravda, March 31, 1978, p. 6.

53 "On Historical Measures . . .," p. 2.

54 Ibid.

55 The "Principles of Land Legislation of the U.S.S.R. and the Union Republics" (Pravda, December 14, 1968, pp. 2-3) is reprinted in Philip R. Pryde, Conservation in the Soviet Union, (London: Cambridge University Press, 1972), pp. 184-99. The "Principles of Water Legislation of the U.S.S.R. and the Union Republics" (Pravda, December 12, 1970) is reprinted in ibid., pp. 224-40. The "Principles of Legislation of the U.S.S.R. and the Union

Republics on the Earth's Interior" (Pravda, July 11, 1975, pp. 1-2) trans. in Current Digest of the Soviet Press, Vol. 27, No. 29 (August 13, 1975), pp. 11-17. The "Principles of Forest Legislation of the U.S.S.R. and the Union Republics" (Izvestiia, June 19, 1977, pp. 2-3) trans. in ibid., Vol. 29, No. 25 (July 20, 1977), pp. 9-16; The "Law of the Union of Soviet Socialist Republics on Air Quality," (Pravda, June 27, 1980, p. 2), trans. in Current Digest of the Soviet Press, Vol. 32, No. 28 (August 13, 1980, pp. 9-12, 19); The "Law of the Union of Soviet Socialist Republics on the Protection and Utilization of the Animal World," (Pravda, June 28, 1980, pp. 1, 3), trans. in Current Digest of the Soviet Press, Vol. 32, No. 29 (August 20, 1980), pp. 10-14, 24.

⁵⁶ An article requiring users to make reimbursement for losses and which would have held officials and other employees individually materially liable for losses, was included in the draft legislation but was deleted from the final law. Article 4.6 specifically states that no compensation is required for losses caused by unauthorized use of water. See "Principles of Water Legislation of the U.S.S.R. and the Union Republics," reprinted in Pryde, op. cit.

⁵⁷ Goldman, op.cit., pp. 46-52.

⁵⁸ Iu. V. Yakovets, "The Intensification of Production and the Evaluation of Resources," Ekonomika i organizatsiia promyshlennogo proizvodstva, No. 9 (September 1979), trans. in Current Digest of the Soviet Press, Vol. 31, No. 50 (January 9, 1980), pp. 5-7.

⁵⁹ Michael Kaser, Soviet Economics (New York: McGraw Hill, 1970), pp. 168-70.

⁶⁰ Article 50 is virtually identical to the article on material liability deleted from the water legislation.

⁶¹ Iu. Tupytsia, "Ekologicheskie faktory v izderzhkakh proizvodstva," Voprosy ekonomiki, No. 7 (July 1977), pp. 116-21.

⁶² Komarov, op. cit., pp. 69-70.

⁶³ Henry Krisch, "Utilization of Land in the USSR," paper presented at the 1980 Annual Meeting of the AAASS, Philadelphia (November 1980).

⁶⁴ Art. 21, "Law . . . on Air Quality," p. 11.

⁶⁵ The adoption of maximum allowable emissions standards is a significant step forward from the usual Soviet practice of setting maximum permissible levels of concentration of pollutants in the ambient air.

⁶⁶ Art. 11, "Law . . . of the Animal World," p. 11.

⁶⁷ See Komarov, op. cit.

⁶⁸ This author agrees with E. E. Schattschneider's statement that "All forms of political organization have a bias in favor of conflict and the suppression of others because organization is the mobilization of bias" (The Semisovereign People, Hinsdale, Illinois: Dryden Press, 1960), p. 69. The essence of political power, Schattschneider argues, is the power to define alternatives. Soviet leadership, in my estimation, is considerably more flexible in entertaining alternatives than previously believed.

⁶⁹ John Hardt found that local and regional party organizations constitute an institutional barrier to the successful introduction of Western technology into Soviet economic systems. See John P. Hardt, "Imperatives of Economic Reform and Communist Political Systems," in Teresa Rakowska - Harmstone, ed., Perspectives for Change in Communist Societies (Boulder, Colorado: Westview Press, 1979), pp. 71-80.

⁷⁰ On the subject of information distortion in Soviet environmental policy, see Charles E. Ziegler, "Soviet Environmental Policy and Soviet Central Planning: A Reply to McIntyre and Thornton," Soviet Studies,

Vol. 32, No. 1 (January 1980), pp. 124-34.

⁷¹ Schwartz and Keech suggest that policy problems may be delegated to an interactive rather than a synoptic process of problem solving when the Soviet leadership is unable to reach a consensus. See Joel J. Schwartz and William R. Keech, "Public Influence and Educational Policy in the Soviet Union," in Roger E. Kanet, ed., The Behavioral Revolution and Communist Studies, (New York: Free Press, 1971), pp. 176-77.

The Carl Beck Papers Recent Publications

- #803 Lars Lih, *The Sowing Committees of 1920*. \$5.00.
- #802 Larry Holmes, *For the Revolution Redeemed: The Workers Opposition in the Bolshevik Party, 1919-1921*. \$5.00.
- #801 James Warhola, *Soviet Ethnic Relations and the Fall of Nikolai Podgorny*. \$4.50.
- #708 Marie Neudorfl, *Tomas Masaryk's Understanding of Democracy Before 1914*. \$5.50.
- #707 Jozse Mencinger, *The Yugoslav Economy: Systemic Changes, 1945-1986*. \$4.50.
- #706 Jonathan Harris, *Ligachev on Glasnost and Perestroika*, \$5.00.
- #705 Barnabas Racz, *The Hungarian Parliament in Transition: Procedure and Politics*. \$5.00.
- #704 Jim Seroka, *Change and Reform of the League of Communists in Yugoslavia*. \$5.50.
- #701 Albert Resis, *Stalin, the Politburo, and the Onset of the Cold War, 1945-1946*. \$5.00.

Please write for a complete list of titles in the series.

Carl Beck Papers
Center for Russian and East European Studies
University of Pittsburgh
4G-12 Forbes Quadrangle
Pittsburgh, PA 15260
(412)648-7407