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TITLE: POLICIES TO CONTROL WATER POLLUTION 1917-72:
AGENDA SETTING IN THE USSR

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This paper is a political science study of Soviet policies to control water pollution over the period 1917-1972. It constructs a chronology of seven pollution control initiatives over that period as case studies to examine how issues have reached the decision-making agenda of the leadership of the USSR. It serves as an introduction to the history of a critical current environmental issue, as an analysis of "agenda setting" for the rulers, and as a reminder that promulgation of decrees and resolutions by the highest authorities has been no assurance of compliance or effective action in the society at large.

The anti-pollution initiatives examined are:

1. The 1922 Russian Republic decree on public sanitation, the first anti-pollution law enacted by the Bolshevik government;
2. The 1937 USSR decision on industrial emissions and a further attempt to tighten emission controls in 1938-39;
3. The 1960 USSR Council of Ministers resolution on integrated water management;
5. The protection of Lake Baikal.
6. The Supreme Soviet resolution of September 1972 ordering intensified measures to safeguard the environment.
7. The environmental resolution of the Central Committee and Council of Ministers of December 1972.

The study concludes that officials of the Soviet bureaucracy were highly influential in proposing new policies and having them placed on the agenda of the leadership. The most influential actors among them were directors of Academy of Science research institutes and policy councils. Senior officials of the health commissariat were also influential in the 1920s and 1930s. However, officials of ministries responsible for day-to-day
management of water resources and related activities did not play an active role beyond the 1950s. The author ascribes their failure to do so not just to preoccupation with other, perhaps conflicting priorities, but also to a desire not to call attention to their poor performance in carrying out their existing water quality responsibilities.
CHAPTER I

INTRODUCTION

This study seeks to improve our understanding of agenda setting in the Soviet Union by analyzing how one important issue—the problem of water quality—gained access to the policy agenda from 1917 through the early 1970s. By examining the origins of key pollution control initiatives mounted during this period, the study seeks to cast some light on three basic questions.

First, who participates in agenda setting in the USSR? Does the impulse to grapple with problems such as water pollution originate primarily within the top leadership and the central party apparatus? Or is agenda setting a broader process in which numerous institutions and individuals may participate meaningfully?

Second, what channels are available for placing issues onto the dockets of leadership bodies in the Soviet Union? Are these channels open enough to ensure consideration of a wide variety of policy initiatives?

Third, what makes an issue ripe for leadership consideration? What role do crises and trigger events play in the movement of issues onto the national agenda? How do institutional and policy changes affect agenda setting?

WATER QUALITY AS A CASE STUDY OF SOVIET AGENDA SETTING

The problem of water quality is an ideal topic for a study of agenda setting in the Soviet Union. The issue has gained access to the top agenda at numerous points in modern Soviet history. Measures to control the discharge of municipal wastes were first enacted in the early 1920s when the population was threatened by a wave of epidemics caused by contaminated drinking water. The controls were later expanded to industrial emissions at the height
of Stalin's industrialization drive in the 1930s. The pollution problem returned to the policy agenda in the post-war period and became the subject of intense leadership consideration under the Brezhnev-Kosygin administration in the late 1960s. Concern over the problem culminated in the early 1970s when the issue of water quality became a regular focus of Soviet policy making. This was illustrated by a variety of indicators, including repeated appeals by top officials for stricter pollution controls, creation of specialized agencies to manage water quality, a dramatic rise in budget appropriations, a major overhaul of Soviet water legislation and the passage of sweeping environmental resolutions in 1972. The water quality issue thus presents numerous instances of successful policy initiation on an issue of major importance to Soviet society.

The development of more effective emissions controls also represents an important break with traditional Soviet attitudes, which have viewed natural resources mainly as inputs to production rather than objects of careful management and protection. The laws and institutions established in the mid-1970s, moreover, have institutionalized the problem within the structure of the Soviet government, ensuring continued attention for years to come. This combination of high-level visibility, large-scale change and lasting consequences makes the water quality problem an especially fruitful topic for reaching mid-range generalizations on the processes of agenda change in the USSR.

The political and technical complexity of the problem further increases its appeal as a case study. Water pollution is an example of what Ostrom calls a "common-pool flow resource

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problem."² A common-pool flow resource is a resource owned in common by a large number of users each of whom has an independent right to use it for his or her own purpose. At low levels of utilization, use of the water body by individual users generally does not impair the rights of others. As demand for the resource increases, however, actions that are perfectly rational for each individual user can impose large externalities or spillover costs on the community of users. If unchecked, such externalities can ultimately destroy the resource for all but a few.

Where common-pool flow resource problems arise, rational self-interest dictates the need for a collective solution involving restraints on individual users. If collective action is predicated on voluntary agreement, however, the chances of action are small since some users will inevitably hold out to reap the benefits foregone by the others. For this reason, effective solutions to common-pool flow problems generally require some form of non-voluntary, governmental organization with coercive powers sufficient to ensure compliance with restrictions on individual uses.

Developing such solutions, however, involves major difficulties. Conflicts among water users are one of the most important sources of difficulty. Since water is used for a variety of purposes (e.g., municipal water supply, industrial cooling, waste removal, recreation, irrigation, fishing, transport, electric power generation), water quality levels that are satisfactory for some users are unacceptable to others. In the USSR, differing water requirements often give rise to sharp conflicts among industrial and governmental agencies engaged in

the exploitation and management of water resources. This complicates problem identification, since in addition to sorting out substantive matters, the policy makers must mediate among many conflicting social, economic, bureaucratic and professional interests.

Disparities in economic and geographic conditions create further difficulties. In the Soviet Union, water resource problems commonly pit heavily industrialized, water-deficit regions in the European part of the country against less developed regions in Siberia and Central Asia. This adds important regional overtones to the issue. Regional differences also tend to inhibit the development of a system-wide perspective, since as long as the problem is confined to major industrial and population centers, the need for nationwide pollution control initiatives is obscured. Due to the diversity of local conditions, environmental protection agencies must also incorporate elements of decentralized management to function effectively. Flexibility and local control, however, conflict with the Soviet penchant for uniform, centralized responses to problems. Finally, owing to the technical nature of the problem, its perceived severity will tend to be in constant flux, varying with the sensitivity of water quality measuring technology and the effectiveness of available purification equipment.

ORGANIZATION

The study consists of analysis of seven important anti-pollution initiatives undertaken by Soviet officials between 1917 and 1972, presented chronologically. Chapter II examines the 1922 Russian Republic decree on public sanitation, the first anti-pollution law enacted by the Bolshevik government. Chapter III traces the origins of the 1937 USSR decision on industrial emissions and examines a further attempt by sanitary officials to tighten emission controls in 1938-39.
Chapter IV carries the analysis into the post-war period by studying the initiation of the 1960 USSR Council of Ministers resolution on integrated water management. This action marked the first serious attempt to improve the planning and utilization of water resources at the republic and national level. Chapter V concludes the study by examining three key initiatives of the 1960s and 1970s: (1) the codification of Soviet water legislation; (2) the protection of Lake Baikal; and (3) the sweeping environmental decrees adopted by the Soviet leadership in 1972. Chapter VI summarizes the findings of the analysis and assesses their implications for the study of agenda setting in the USSR.

RESEARCH HYPOTHESES

The central hypothesis of this study is that officials of bureaucratic organizations are a major source of agenda items in the Soviet Union. Applied to the problem of water pollution, this hypothesis is restated as follows:

**Hypothesis 1.** Officials of specialized bureaucratic institutions were highly influential in gaining the inclusion of the water quality issue on the leadership's decision agenda from 1917 through 1972.

The hypothesis was inspired by Downs' observation that bureau officials—including those in the Soviet Union—are motivated not only to influence policy implementation, but also to shape the contents of the agenda and the alternatives from which decisions are made. Bureau officials in the USSR are further assumed to possess vital resources needed to influence agenda setting, including technical and administrative expertise, information, analytical resources, access to internal communications channels and contacts with senior policy makers. Such resources are likely to be important in mobilizing concern about water pollution, given the technical complexity of the problem and the policy makers' need for the assistance of bureaucratic institutions in developing effective responses. This combination of motivation, resources
and leadership need is hypothesized to provide Soviet bureau officials substantial potential influence in agenda setting.

Examination of this hypothesis will provide a preliminary answer to the first question posed in this study--i.e., who participates in agenda setting in the USSR? A full picture of agenda setting, however, also requires insights into the factors that facilitate the success or failure of policy initiatives by Soviet bureau officials. These factors are the subject of the second and third hypotheses.

Hypothesis 2. The probability of the water quality issue reaching the agenda increased when bureau officials successfully defined the problem as a pressing national concern.

This hypothesis is derived from Downs's analysis of change in large bureaucratic institutions. According to Downs, large organizations are reluctant to change existing policies because these represent an enormous investment of time, effort and money. To adopt new policies, such costs must be incurred all over again. As a result, new policies tend to be undertaken only if their putative benefits are relatively high. The agenda setting process is likely governed by a similar cost-benefit calculus, since by adding new issues to the agenda, the policy makers risk losing the benefits of existing policies and commit themselves to spend time and effort developing replacement policies. The second hypothesis applies this analysis by postulating that the issue of water quality will be accepted as a legitimate and necessary focus of policy making only when bureau officials demonstrate to the leadership that pollution is a truly pressing national concern.

Hypothesis 3. The probability of the water quality issue reaching the decision agenda increased when bureau officials developed viable policy alternatives.

The third hypothesis reflects the preference of policy makers to deal with problems that they can do something about as opposed to those which are unsolvable or beyond their ability to

3*Inside Bureaucracy*, p. 195.
resolve. This tendency is likely to be particularly strong in bureaucratic political systems, where the disincentives to address new problems are relatively high. Moreover, as Jones has noted, decision making procedures in the USSR typically call for both the agenda item and the proposed decision to be circulated for interagency clearance simultaneously. As a consequence, issues are more likely to be accepted for decision making when a viable, broadly supported policy proposal has been developed. The third hypothesis is intended to determine the importance of this factor in explaining the movement of policy issues onto the decision agenda in the USSR.

The methods used to evaluate these hypotheses are outlined below. Since the analysis of influence is of particular concern, attention will first be devoted to specifying how the influence of bureau officials on the Soviet agenda will be assessed.

**METHODOLOGY AND DATA**

The following methodology will be used to determine whether bureau officials influenced the entry of the water quality issue onto the agenda. First, for each initiative studied, primary Soviet sources will be examined to ascertain the views of agency officials, academic researchers, ad-hoc groups and Party and State officials concerning the water quality problem. The principal data sources will include: the central press, specialized journals, research reports, conference proceedings, candidates’ dissertations, internal agency documents and other materials on water resource policy. Information from related policy areas (e.g., health policy, agriculture, fishing, water transport, hydropower, science policy, nature conservation) will also be reviewed for insights into the positions of the participants and the level of official and expert concern over the problem.

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Using this material, a chronological account will be constructed indicating: (1) the identities and affiliations of the individuals and groups participating in discussing the issue; (2) the policy proposals developed to address the problem; (3) the channels used to bring these proposals to the attention of senior policy makers; and (4) the response of senior Party and Government leaders. The progress of the issue will be traced until it either gains access to the national or regional agenda or ceases to command attention from the policy community.\(^6\)

If the issue reaches the national agenda, we will seek to determine whether this was influenced to a significant degree by the initiatives of agency officials and other participants. Four criteria will be used to determine whether influence was exerted: (1) **timing**—the sponsor's proposal was conceived and communicated to the policy makers prior to the placement of the issue onto the agenda; (2) **similarity in content**—the proposal and subsequent leadership discussions and/or actions embody similar descriptions or analyses of the problem and similar means of addressing it; (3) **interaction**—prior to the issue's entry onto the agenda, the sponsoring individual had direct or indirect contact with one or more senior officials capable of placing the issue on the leadership agenda; (4) **participation**—the sponsoring individual participated in formal decision making activity once the issue was placed on the agenda.

The second hypothesis—which posits that agenda access was facilitated when officials demonstrated that the water quality

\(^6\)Per our earlier discussion, the water quality issue will be considered to have reached the policy agenda when the following criteria are present: (1) mention by ranking Soviet officials; (2) references in annual and five-year plans; (3) increased press coverage; (4) commissioning of research programs; and (5) discussion at Party Congresses, Supreme Soviet sessions and similar fora. The issue will be considered to have reached the decision agenda when there is evidence of: (1) creation of legislative drafting committees; (2) circulation of draft proposals for interagency clearance; and (3) designation of officials or agencies to implement the anticipated policy.
problem was a pressing national concern—will be operationalized by two indicators. The first is linkage to leadership policy priorities. Such linkages have been shown to increase the visibility of emerging issues and change the context in which the leaders view them.\(^7\)

The second indicator is linkage to crises and focusing events. The data will be examined to determine whether bureau officials explicitly sought to link the water quality issue with leadership priorities, crises or other significant events.

The third hypothesis proposes that the development of a viable policy proposal increases an issue's chances of reaching the Soviet decision agenda. A policy proposal will be considered viable if there is a broad consensus among the participating agencies that: (1) the proposed measure was an appropriate response to the water pollution problem; and (2) the proposal was consistent with political, budgetary and technical constraints.

\(^7\)See Gustafson, "Environmental Issues Become Legitimate," pp. 48, 51.
CHAPTER II

THE INITIATION OF THE 1922 PUBLIC SANITATION LAW

This chapter examines the role of bureau officials in initiating the USSR's first major decree on the control of water pollution and other environmental health hazards. This action, taken by the Council of People's Commissars (Sovnarkom) in September 1922, placed responsibility for water quality squarely within the emerging Soviet public health bureaucracy and established a rudimentary system of pollution monitoring and inspection procedures. Although its implementation was hampered by administrative and practical problems, the resolution exerted significant influence on later anti-emissions efforts in the USSR. Analysis of its origins sheds important light on the role of ministerial officials in placing issues on the leadership's agenda during the early years of Soviet rule.

The Chapter contains two sections. The first discusses the roots of the 1922 law, which can be traced to a series of effluent treatment guidelines adopted by the tsarist health ministry in 1908. The second section examines the sanitation proposals sponsored by Nikolai Semashko, the first Soviet health commissar, and his deputy Aleksandr Sysin, and traces how these proposals were placed on the government's agenda.

THE 1908 EFFLUENT STANDARDS

Although anti-pollution laws had been in force since the time of Peter the Great,1 the Russian government first became seriously concerned about water pollution in the late 1800s. The driving force was a group of reform-minded physicians serving in the

1A decree adopted in 1719 banned the dumping of any debris into the Neva River, punishable by "beating with the knout or lifetime exile." M. V. Verzhblovskii, "Iz istorii gigieny vody v Rossii" [From the history of water hygiene in Russia], Gigiena i sanitariia, no. 8 (1958), p. 37.
zemstvos, or local self-governing boards established in the Great Reforms of the 1860s. These physicians perceived a direct relationship between the country's poor sanitary conditions and its extremely high mortality rate—then twice as high as in Western Europe. The leader in this movement was Fedor Fedorovich Erisman (1842-1915), a native of Switzerland who emigrated to Russia in 1866. Erisman's belief in the importance of sanitation was clearly stated in his 1872 textbook:

The immediate goal of hygiene is to study the influence on man of all possible phenomena of nature, . . . to examine the influence of those manmade conditions within which man lives, . . . and finally, to find the means to ameliorate the actions of all natural and manmade conditions which are unfavorable to the human organism.

Motivated by similar concerns, the Moscow Zemstvo commissioned Erisman in the late 1860s to conduct an intensive investigation of the region's sanitary conditions and their influence on public health. The results of the research were published in a mammoth, 19-volume compendium which documented widespread sanitary deficiencies, particularly in the area of water supply and sewage removal. Armed with these findings, Erisman gained support for the creation of a series of research institutions to carry on further work of this type. In 1882, he founded the Department of Hygiene at Moscow University, and several years later formed the Moscow Hygienic Institute. In 1891, he organized the Moscow Sanitary Station, the first local institution specifically devoted to improving public health conditions. These institutions served as a training ground for numerous water pollution specialists, the most notable of which was Grigorii Vitalevich Khlopin (1863-1929), author of Russia's first monograph on effluent treatment methods in 1901.

Spurred by the work of Erisman and his associates, public health organizations began to focus attention on the problem of sanitation.

2In the mid 1800s, the death rate in St. Petersburg was 42.4 per 1,000 population. This compared with annual death rates of 29.9 per 1,000 in Brussels, 28.5 in Paris, and 25.0 in London. Ibid., p. 82.
water quality around the turn of the century. The prestigious Pirogov society discussed the subject at its congress in 1896. After the congress, a group of hygienicists petitioned the government to adopt special legislation on the dumping of harmful wastes into rivers and streams. These urgings went unheeded, causing the Society to return to the problem at its 1898 and 1902 congresses. These entreaties eventually prompted the Medical Council of the Ministry of Internal Affairs (which was responsible for health administration) to organize a scientific commission, headed by Khlopin, to investigate the condition of Moscow's waterways in 1906.

After a further round of studies, the Khlopin Commission in 1908 submitted a draft decree to the Medical Council entitled, "Sanitary Requirements (Sanitarnye Trebovaniia) Which Must be Satisfied by Effluents Being Discharged into Surface Water Bodies." The decree required effluents to be at least as pure as the water into which they were discharged and that they contain no toxic substances or disease-causing bacteria. It also proposed a series of requirements concerning temperature, color, acidity and dissolved oxygen that effluents had to satisfy prior to their discharge into a surface water body. The Medical Council adopted the draft later that year, thereby establishing Russia's first emissions standards.

The Trebovaniia evoked an immediate protest. The business community objected to the difficulty and expense of treating emissions. Leading hygienicists objected to the statute's failure to take into account the mixing and dilution of wastes with the water of the receiving river or stream. In expectation of the dilution, critics contended, wastes containing substantially higher concentrations of impurities than naturally present could

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3These actions were part of a broader effort, also directed by Khlopin, to overhaul the entire body of imperial medical and sanitary legislation. Draft codes were also prepared on the sanitary protection of air and soil, as well as housing sanitation and anti-epidemic measures.
be discharged without endangering human health or the condition of the water body.

The Medical Council sought to accommodate these criticisms by modifying the standards in 1910. But this did little to diffuse industrial opposition, which by then had gained the support of the Moscow Stock Exchange Committee and influential trade associations. The movement to repeal the controls reached a head in 1911, when the Ministry of Trade and Industry held a special conference to hear the industrialists' complaints. On the advice of the conference, the Ministry created a new advisory body—referred to as the Temporary Committee—to revise the 1908 Trebovaniia in light of the objections of industry and the hygienicists. During the next several years, the Committee organized a series of research expeditions in the Moscow region and conducted pioneering research on the emissions of various branches of industry. The commission's work, however, was cut short by the outbreak of World War I and the ensuing revolution. As a consequence, the revised emissions standards were never developed.

Thus, by the end of the tsarist period the contamination of water by harmful wastes was beginning to be viewed as an issue requiring special government attention. Under the prodding of Erisman and Khlopin, the issue of water pollution had been discussed within the Medical Council, which responded by issuing initial effluent treatment guidelines in 1908. These guidelines lacked the imprimatur of the tsar or authoritative State bodies and thus had little practical impact. Nonetheless, their adoption shows that the problem of water quality had been incorporated on the agenda of the health bureaucracy and was starting to be taken seriously by senior officials.

EARLY SOVIET INITIATIVES

Following the Revolution, the problem of polluted water attracted further attention as proponents of improved sanitation attained key positions in the medical establishment. The leading health
figure in the period was Nikolai Aleksandrovich Semashko (1874-1949). A long-time Party member and personal associate of Lenin, Semashko was the chief architect of Soviet health policy from the revolution until 1930. Exiled by the tsarist authorities shortly after completing his medical studies, Semashko had no experience in zemstvo medicine. But like many zemstvo physicians, he was a firm believer in the need for better public hygiene, which he described as the "cornerstone and guiding element (konstitutsionnyi priznak)" of Soviet health policy. Semashko's commitment to preventative medicine may also have influenced Lenin's thinking on health policy, which went along similar lines.

Semashko's principal advisor on sanitary matters was Aleksandr Nikolaevich Sysin (1879-1956). A hygienist by training, Sysin graduated from the Moscow University medical faculty in 1908, and later worked as a sanitary physician in the zemstvos of Nizhnyi-Novgorod (now Gor'kii), Khar'kov, Saratov and Moscow. These experiences led to appointment as director of the sanitary-epidemiological department of the Soviet health ministry in 1918, a position he held through 1931.

Under the influence of Semashko and other officials, the Soviet state took several actions in the years after the revolution to address the unsatisfactory sanitary conditions inherited from tsarist regime. The first step in this direction was taken in March 1918, when the Eighth Party Congress included in the Party Program a commitment to implement decisive measures to improve health and sanitation, including the improvement of the sanitary condition of populated places (particularly soil, water, air) and the passage of sanitary legislation.

Semashko received a medical degree from Kazan' University in 1901. However, he spent most of his pre-1917 career as a Bolshevik political activist, including 10 years as a close associate of Lenin during the latter's exile in Europe. He returned to Russia in September 1917, and after the October revolution, was named head of the Medical-Sanitary Department of the Moscow Soviet.
This was followed in July 1918 by the consolidation of the medical-sanitary units of the various government bureaus into a single People's Commissariat of Health (known by its Russian acronym, NKZdrav). The idea of placing health affairs under one roof was also the brainchild of Semashko, who considered it essential to improving Russia's appalling sanitary conditions and high disease rates. This action was achieved despite the opposition of other department heads, who were reluctant to relinquish control over their own medical units. As Semashko later recalled:

The economic managers (khoziaistvenniki) were against it. Our position was touch-and-go. Only the strong support of Vladimir Il'ich [Lenin] saved the resolution and by an overwhelming vote the People's Commissariat of Health was created.

The government took a further step to address the pollution problem in February 1919, when the Supreme Council of the National Economy (VSNKh, or Vesenkha) established the Central Committee for the Protection of Water Bodies from Industrial Pollution. This agency, known as Tsentrvodookhran, was the successor to the Temporary Committee on water pollution created by the Imperial Ministry of Trade and Industry in 1911. Its principal functions included studying the influence of industrial wastes on water quality; developing standards for regulating industrial emissions; and advising factories on the design and construction of waste treatment devices. These capabilities were augmented in 1921 with the establishment of the Moscow Sanitary Institute, a much expanded successor to the sanitary station founded by Erisman, after whom the institute was named.  

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5 P. S. Belov, Tsentralkomitet po okhrane vodoemov, pp. 25-30. Under Belov's leadership, the Committee organized several major expeditions to chart water quality levels in the Moscow basin and elsewhere. Like its predecessor, it was less successful in fostering improved industrial waste treatment due to lack of cooperation from the factories it sought to assist.

6 The institute's title was the Moscow Sanitary Institute Named After F. F. Erisman, hereafter the Erisman Institute.
Initially, most of the energies of NKZdrav and affiliated health organizations were taken up with the war on epidemics, which swept the country in successive waves until the early 1920s. When the epidemic threat began to recede, Semashko turned his attention to strengthening control over environmental health hazards as a means of averting further disease. He first raised the issue in late 1921 at a meeting with his top advisors—including deputy commissar, Z. P. Solov'ev, and Sysin. At the meeting, Semashko instructed his assistants to develop proposals to improve NKZdrav's procedures for monitoring water pollution and other sanitary problems and to augment the financial and administrative resources available to the local sanitary inspectors. Sysin took charge of these efforts and, in February 1922, presented a list of recommendations to NKZdrav's kollegiia, or policy making board. The kollegiia approved most of Sysin's suggestions, and instructed him to draft a resolution for submission to the Sovnarkom. The draft was circulated within NKZdrav in the Spring of 1922, and was reviewed at the Sixth All-Russian Congress of Bacteriologists and Epidemiologists in May of that year.

At this point, the initiative encountered two important setbacks. The first came in April or May 1922, when a decree was enacted transferring the financing of most health care programs from the republic level to provincial and oblast' soviets. This action sharply reduced the funds available to combat sanitary problems, since the regional soviets simply delegated their responsibilities to city and village soviets which were even less

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7 The incidence of typhus rose from 21.9 per 10,000 residents in 1918, to 265.3 in 1919. It reached a peak of 393.9 per 10,000 in 1920. Field estimates that ten million people died from epidemics between 1916 and 1924. Field, *Soviet Socialized Medicine*, pp. 51-2.
capable of financing health services.\textsuperscript{8} The overhaul in health financing thus rendered unworkable one of Sysin's key recommendations, which was to increase the number of local inspectors funded by NKZdrav. The second adverse development was another alarming outbreak of cholera, the incidence of which rose from 2,700 in April to nearly 17,000 in July 1922. In the rush to respond to this epidemic, Sysin's draft decree was set aside and appeared in danger of being forgotten.

In a last-ditch effort to salvage the initiative, NKZdrav included a special appeal for new sanitation legislation in a report on anti-cholera measures forwarded to the Presidium of the All-Union Central Executive Committee, or VTsIK, in July 1922. The appeal apparently struck a responsive chord, for the VTsIK subsequently authorized NKZdrav to incorporate its proposals in a draft decree to be submitted to the Sovnarkom. In compliance with this order, Sysin drafted a decree entitled, "On the Sanitary Organs of the Republic." The document was presented to the Sovnarkom and adopted without further change on September 15.

The decree gave local sanitary inspectors the right to carry out sanitary inspections at factories and other establishments and to order the removal of conditions posing a threat to public health. If the orders were not followed, sanitary officials could petition higher-level soviets to fine the guilty parties. In exceptionally dangerous cases, proceedings could be initiated to shut down the offending enterprise pending resolution of the matter in the courts. Although these powers were far more circumscribed in practice than they appeared on paper, the 1922 decree nonetheless established the basic monitoring and control procedures which have governed Soviet water quality control measures to the present day. The decree also placed the control of water quality among the priorities of the health system,

\textsuperscript{8}Ibid., p. 344. According to Davis, the decree marked a major decline in the priority of the health sector and had a major negative influence on the long-term development of Soviet medical and sanitary programs.
thereby giving the issue a toehold on the governmental agenda. This implied a continued claim on the time and attention of the policy makers in the future.

CONCLUSIONS

The record indicates that bureau officials were influential in placing the issue of water sanitation on the leadership agenda in the early years after the revolution. This case thus supports the first hypothesis under consideration in this study. The movement of the issue onto the agenda appears to have been closely related to the linkage with the cholera epidemic underway at the time. This provides partial support for the second hypothesis. However, this case fails to support the third hypothesis that agenda access was linked to development of a viable proposal by bureau officials.
CHAPTER III
EMISSION CONTROLS DURING FORCED-DRAFT INDUSTRIALIZATION

The rudimentary emissions controls adopted in 1922 helped curb some of the most serious water pollution difficulties experienced by the USSR at the time. Such limited measures, however, were inadequate to cope with the massive growth in emissions generated by the program of rapid industrialization launched by Stalin in 1929. As the industrialization drive gained momentum, officials of NKZdrav and other agencies began to press for more effective anti-pollution measures. This chapter examines two key bureau initiatives undertaken during this period and assesses their influence on the Soviet policy agenda.

The first initiative was an attempt by a group of sanitary officials—including Aleksandr Sysin—to promote the USSR's first controls on industrial emissions in the mid 1930s. Proposals put forth by these officials were clearly influential in the Sovnarkom's decision to adopt a major industrial pollution control law in September 1937. The second initiative was an attempt by some of the same officials to promote more fundamental water management reforms in 1938. These changes failed to reach the agenda.

THE 1937 ANTI-POLLUTION LAW

The Emergence of a Serious Water Pollution Problem

The launching of the First Five-Year Plan (1929-1932) placed great strains on the USSR's water resources. During this period, 1

1By 1925 the incidence of infectious diseases had fallen below pre-war levels. This was accompanied by a reduction in mortality rates in European Russia from a peak of 46.7 deaths per 1,000 population in 1919 to 18.1 in 1928. The improvement stemmed in part from the efforts of sanitary inspectors to protect drinking water from domestic and industrial wastes.
industrial production expanded 140 percent, while output of machinery tripled. Fuel and metal production also grew impressively. Absent even partial data, it is impossible to gauge how rapidly emissions grew during these years. But judging from industrial output figures, the volume of effluent produced by Soviet factories increased from two to three times during the course of the plan. Municipal emissions likely grew at a similar rate, reflecting the rapid growth of the urban population.

The increase in domestic and industrial emissions led to a sharp decline in water quality. Although the national press did not begin reporting environmental problems until the 1950s, serious pollution was reported in specialized publications almost from the start of the Plan. In 1930, for instance, the journal of the All-Russian Conservation Society reported a mass fish kill on the Volga above Gor'kii due to wastes from a local leather works. The Erisman Sanitation Institute found heavy pollution from pulp and paper plants near Moscow beginning in 1931. Later sources document similar incidents in Siberia and elsewhere.

The deterioration in water quality was first viewed as a problem in the country's urban areas. Most Soviet cities had made limited progress in developing up-to-date sewer and waste treatment facilities prior to 1927. Plagued by inadequate financing and shortages of equipment and materials, local sewer systems became increasingly overloaded and in some cases broke

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2 Okhrana prirody, 1930, no. 8-10, p. 215. The Vserossiiskoe Obshchestvo Okhrany Prirody (VOOP), a voluntary society formed in 1924, has focused mainly on traditional nature preservation activities. In the 1930s and 1940s, it lobbied for the creation of nature preserves (zapovedniki) and for better hunting and fishing rules. In the 1950s, the Society gradually began to speak out for laws against air and water pollution. See Philip R. Pryde, Conservation in the Soviet Union (Cambridge: Cambridge University Press, 1972), pp. 20-21.

3 The Magnitogorsk Metallurgical Combine was reported to have caused heavy pollution of the Ural river, including a large fish kill in 1933. Similar events occurred in the Kuznets basin metallurgical region in the early 1930s. See Priroda, no. 9 (1957), pp. 55-60; and no. 3 (1959), pp. 49-54.
The result was a sharp rise in the volume of untreated effluent pumped into rivers, canals and underground wells. This was accompanied by breakdowns in urban transportation, housing and other services, producing a serious crisis by the early 1930s. These problems attracted the attention of top Party and Government bodies which gradually began to address some of the most pressing water quality difficulties facing the nation's cities.

One of the first indications of high-level concern came in August 1930 when the RSFSR Sovnarkom took note of a report by the Commissariat of Internal Affairs (NKVD) documenting widespread lags in the expansion of municipal services, including constant "disruptions in satisfying industrial requirements for water." The Sovnarkom's response, though, was limited to minor administrative changes which did little to alleviate the problem.4

Piecemeal efforts gave way to a more concerted approach in June 1931 when the urban crisis became the focus of a plenary session of the Central Committee. Although the evidence is sketchy, the impulse for the session may have come from Lazar M. Kaganovich. This is suggested by Kaganovich's prominent role at the plenum, which included delivering the main report. Kaganovich's initiating role would also have been consistent with his position as first secretary of the Moscow city party committee, which gave him direct responsibility for the urban problems resulting from industrialization. As Secretariat member and key advisor to Stalin, Kaganovich was also well-positioned to participate in the formation of the Central Committee's agenda.

In his plenum report, Kaganovich paid particular attention to the topic of water pollution. Questions of sewer construction,  

4NKVD and Gosplan, for example, were instructed to increase funds for municipal services and to give water and sewer programs better access to scarce construction materials. No change was made in the administration of urban services, which remained under the control of the NKVD and its Chief Administration for Municipal Services. "Po dolkadu Narkomvnutela," paras. 1 and 10.
Kaganovich stated,

are questions which deal directly with the protection of workers' health. It is necessary to ensure that each soviet, step by step, kilometer by kilometer, encompasses its city with a network of sewer lines, constructs fields of filtration [to purify effluent], and puts its city into proper sanitary condition.

Kaganovich's concerns were clearly reflected in the resolution adopted at the close of the Plenum, which noted that the rise in untreated emissions had created "entirely unsatisfactory sanitary conditions" in many urban areas. To remedy the situation, the Central Committee called for major changes in the construction, financing and operation of municipal services, and ordered the preparation of a "serious, scientifically-substantiated long-term plan" for the development of Moscow. It also created a cluster of new urban development agencies which promptly acquired significant expertise in pollution control. One such agency was the Academy of Municipal Services, which was placed in charge of research in the field of housing and communal services. The decision also ordered the creation of full-fledged Commissariats for Municipal Services (NKKhoz) in the RSFSR and the union-republics. In addition, the resolution called for the institution of a special effluent tax to finance the building of city sewers and waste treatment works.

5The new commissariats assumed the functions previously performed by the municipal services departments of the NKVD. For the functions of the RSFSR NKKhoz, see "Ob utverzhdenii Polozheniia o Narodnom Kommissariate Kommunal'nogo Khoziaistva RSFSR" [On the ratification of the Statute of the RSFSR People's Commissariat of Municipal Services], (SU RSFSR, 1931, no. 3, art. 10).

6The RSFSR VTsIK and Sovnarkom established the effluent tax in August 1931. (SU RSFSR, 1931, no. 51, art. 385). Water and sewer services had been partially financed through user fees since the 1920s. (SU RSFSR, 1921, no. 62, art. 445). The 1931 tax, however, was based not on the amount of water consumed, but on the volume of industrial effluent entering city sewer lines and local water bodies. The tax varied according to the volume and concentration of the effluent, with treated wastes being charged one-half as much as unpurified emissions. Proceeds from the tax were to be deposited in the budgets of city and settlement soviets.
The above measures failed to halt the spread of the problem. As before, outlays for sewage treatment remained inadequate, while shortages of labor, building materials and equipment continued to hamper sewer construction. In response, the government created several additional specialized institutions. The most prominent was the All-Union Institute for Water Supply Engineering and Hydrogeology (Vodgeo). Formed by the Commissariat of Heavy Industry in January 1934 out of the former Central Committee for Water Protection, Vodgeo quickly established itself as the leading institution for the design of large-scale waste treatment installations.\textsuperscript{7}

By the early 1930s, then, the issue of water pollution was again beginning to attract the attention of senior Party and Government officials. The actions taken at the time, however, were mainly addressed to the improvement of urban sewer systems, suggesting that top policy makers had yet to perceive the need for more forceful controls over the discharge of industrial and municipal wastes. This focus began to broaden in 1934, as officials of the public health and urban services bureaucracies became increasingly active in pressing for tighter emissions regulations.

A key proponent of tighter pollution regulation during the 1930s was S. N. Stroganov (1881-1949). One of the USSR's leading sanitary engineers, Stroganov had worked in Moscow's municipal services since 1906, and thus was deeply familiar with the shortcomings in the city's water and sewer systems. As a member of several influential advisory boards—including NKZdrav's scientific-technical council—Stroganov was also well-positioned and "used exclusively for carrying out sanitary engineering measures."

\textsuperscript{7}"Khronika--Iz rabot instituta Vodgeo" [Chronicle: From the work of Vodgeo], \textit{Sanitarnaia tekhnika}, no. 4 (1934), p. 1. Vodgeo's 1934 work plan included contracts with such industrial giants as the Magnitogorsk and Balkhash Metallurgical Combines, as well as with Moscow, Baku and other major cities.
water systems were "exposed to the threat of bacterial and chemical pollution . . . . Such pollution was extremely severe even on the mightiest rivers." Where regional or centralized sewer systems existed, the majority of industrial enterprises had failed to link up with them and were continuing to discharge their wastes directly into nearby rivers and streams. Attempts by sanitary inspectors to correct the situation were said to be "highly ineffectual" owing to the failure of many enterprises to receive funds for waste treatment from their directing bodies. Finally, the study revealed that local sanitary zones frequently failed to stem contamination of drinking water sources due to legal and administrative shortcomings.

Responding to these criticisms, the conference adopted a resolution outlining a series of corrective actions. These included: improvements in the procedures for establishing sanitary-protective zones around key water resources; "more persistence and follow-through" by VGSI and NKKhoz in monitoring industrial emissions; and the passage of legislation requiring enterprise directors either to construct waste purification works or to link up with local sewer systems. The conference resolution also urged forceful action to limit emissions by a series of pollution-intensive industries which had thus far neglected to do so.10

Significantly, these suggestions were offered as modifications to a "draft law on the sanitary protection of open waterbodies," which had been submitted to the conference for comments.

Published sources contain no further references to the draft law following its review at the May 1936 conference. But in July 1937, the USSR Central Executive Committee and Sovnarkom issued a joint resolution ordering a major expansion of controls over industrial and municipal emissions. The first section of the

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10 Major offenders included factories belonging to the synthetic fibers, coke, leather, cellulose, chemicals and dyes industries.
measure provided detailed instructions concerning the sanitary-protective zones established to safeguard local drinking water sources and other waterbodies used by the population. Included were specific rules concerning the types of zones to be instituted in various localities, the procedures for establishing them and the kinds of wastes prohibited from being discharged into the protected waterbodies. These were followed by a series of regulations on factory emissions, including: (1) a clause prohibiting the discharge of industrial wastes within the territory of cities or workers' settlements; (2) a rule requiring operating enterprises either to connect with local sewer systems or build their own purification devices by 1942; and (3) a requirement that newly constructed enterprises be allowed to start production only after local sanitary officials certified that appropriate emissions control measures were in place.

The Sovnarkom's action signified an important expansion of Soviet pollution control policies. First, the new measures were nationwide in scope, whereas the 1922 decree applied only to the Russian republic. They were also primarily addressed to the control of industrial emissions, a topic largely ignored by the earlier decree. The 1937 decision, moreover, reflected a recognition that significant resources would have to be invested to improve water quality levels in the USSR. This contrasts with the earlier expectation that regular sanitary inspections would suffice to bring the problem under control. The 1937 resolution is thus correctly viewed as marking the start of a new stage in Soviet water pollution control efforts.

This case provides support for all three hypotheses under examination in this study. There is persuasive evidence that Academy (S. N. Stroganov) and Ministerial (M. F. Vladimirskii) individuals influenced the placement of the water quality issue on the national policy agenda in January 1935. There is also reasonable basis to conclude that bureau officials -- Stroganov, Sysin and Lebedevaia -- influenced the key phase of agenda setting in 1937. Bureau officials explicitly sought to link the water
quality problem to the leaders' desire to improve urban services in the early and mid 1930s. Finally, the program advanced at the May 1936 conference provided a viable, broadly supported policy alternative closely similar to the Sovnarkom's resolution.

THE 1937-38 WATER MANAGEMENT PROPOSALS

On the heels of their apparent success in fostering the 1937 industrial pollution controls, VGSI and NKZdrav officials next sought to convince the leaders of the need for a fundamental reform of the country's approach to managing water resources. The basic vision for the reform had been articulated a decade earlier by E. L. Kenig. In a book of essays published in 1929, Kenig had characterized the USSR's water industry (vodnoe khoziaistvo) as fundamentally incapable of meeting the needs of industry, agriculture and the domestic population for clean, inexpensive water supplies. In his view, this reflected the dispersal of water management functions over a wide range of agencies, each responsible for a particular type of water use. The consequence was a proliferation of uncoordinated, single-purpose projects which often had detrimental impacts on the broader community of water users. In place of this departmental approach, Kenig proposed that all activities involving water be consolidated into a separate branch of the economy directed by a network of basin and national agencies dedicated to the integrated use (kompleksnoe ispol'zovanie) and protection of water resources.

Kenig's ideas attracted little official attention at the time. However, given the USSR's proliferating water resource problems—and the government's demonstrated receptivity to the water quality issue earlier that year—Sysin and his colleagues apparently perceived that the time was ripe to advocate these proposals a second time in the latter months of 1937. This was done in a series of articles published in the journal Vodosnabzhenie i sanitarnaja tekhnika (Water Supply and Sanitary
The first article, which appeared in August, called on the country's economic planners to include measures to address the water management problem in the Third Five-Year Plan (1938-1942), then being prepared. This appeal, countersigned by Lebedevaia, was issued by the Board of the All-Union Scientific-Technical Society of Water Supply and Sanitary Engineers (VNITO), a professional society representing practitioners in this field.

This was followed in September 1937 by an extraordinary open letter, "To the Chairman of the USSR Sovnarkom, Comrade V.M. Molotov," signed by Sysin, N. I. Fal'kovskii (Chairman of the VNITO Board), K. K. Troshin (Director of the Academy of Municipal Services) and N. M. Ushakov (Gosplan). As with the first article, the letter contained a series of suggestions for the upcoming economic plan. The third appeal was expressed in an editorial in the November issue of the journal entitled, "Place Water Supply Questions in the Center of Attention."

The thrust of the articles, stated most succinctly in the open letter to Molotov, was that water supply and effluent removal had become a dangerously weak link in the Soviet economy. The problem had been exacerbated by the failure to devote sufficient attention and resources to water resources in either the First or Second Five-Year Plans. As a result, the nation's rivers had been contaminated "over tens and hundreds of kilometers," water supply systems had become badly overloaded and domestic fishing resources had been severely depleted. To dispel the impression that the problem was limited to a few industrial centers, the November

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11 Vodosnabzhenie i sanitarnaya tekhnika is the official organ of Soviet water management professionals. During the 1930s, it was jointly published by the All-Union Scientific-Engineering Society for Water Supply and Sanitary Engineering (VNITO); Vodgeo; Souiuzvodstroi (the water engineering institute of the Commissariat for Heavy Industry); NKzdrav and NKKhoz.

12 "Predsedatel'iu Sovnarkoma SSSR tov. V. M Molotovu," ibid., no. 9 (1937), pp. 1-3. The article stated that the appeal had been sent to the Sovnarkom's staff secretary (upravliaiushchii delami) on July 14, 1937.
editorial noted that thirty out of forty water bodies surveyed by Vodgeo had been revealed to be in an extremely polluted condition.

The articles also documented severe disruptions in water supply systems, due to the tendency of planners and designers "to forget about water" in deciding the location of new industrial plants. As a result,

a whole series of extremely important regions are experiencing significant difficulties in water supply (including the Donbass, Minsk, Cheliabinsk, Khar'kov, [and] Sverdlovsk regions).

Such problems, the authors stated, had reached a point where they had become a major constraint on further economic development, "a bottleneck in the economic life of the country," and a brake on the development of socialist industry. This was accompanied by serious errors and miscalculations in hydropower construction, requiring the expenditure of enormous sums on fix-up work. For example, it had been necessary to build a dam around the entire Gor'kii automobile factory--at a cost of 200 million rubles--to prevent the plant from being flooded by the recently commissioned Cheboksary hydroelectric dam.

To correct this situation, the officials advocated a series of reforms very similar to those advanced by Kenig. Included were the development of regional and basin-wide water resource plans (general'nye skhemy); compilation of a comprehensive water inventory (vodnyi kadastr) showing the quantity and quality of available resources; the organization of special water supply and waste treatment groups by each industrial commissariat; and the allocation of more equipment and personnel for resolving water supply and emissions problems. To underscore the urgency of the situation, the letter to Molotov concluded that without rapid implementation of the proposed measures, "the normal development of the national economy and the satisfaction of defense needs will be impossible."

The above proposals appear to have fallen largely on deaf ears. A careful reading of the Third Five-Year Plan guidelines, for example, provides no evidence that a major shift in water
resource policy was initiated at that time. A scanning of major Party and Government decisions and specialized water quality publications reaches the same conclusion. In short, the sponsors failed to exert any influence on the policy or decision agendas. Without access to internal Party documents, it is impossible to determine conclusively why the initiative failed. Several tentative observations, however, can be gained by examining this case in light of the hypotheses elaborated above.

The first observation concerns the channels used to communicate the reform proposal to the leadership. In contrast to the previous cases, the 1937-38 VNITO initiative was not communicated directly to the leadership via an official report or memorandum, but was articulated in a series of articles published in the professional press. This guaranteed that it would reach a wide expert readership, but provided no assurance that the message would be received by the agenda gatekeepers. The drafters apparently sought to increase the proposal's saliency by couching it as an "open letter" to Sovnarkom Chairman Molotov. While certainly provocative, this gambit had little appreciable effect, thereby underscoring the difficulty of placing issues on the agenda by such indirect channels.

Second, the sponsors clearly attempted to link their proposal to an important policy matter--the USSR's defense capability--which had been elevated at the time to the status of a supreme national priority. They also endeavored to capitalize on the country's increasing water resource problems--which they described as having reached crisis proportions--and to warn of even more severe difficulties in the event their reforms were not undertaken. These tactics also failed to influence the leadership. This suggests that such linkages, while clearly important, are not a sufficient condition for the success of agenda initiatives in the USSR.

A third observation pertains to the uncertain viability of the reform proposals tabled by the VNITO coalition in 1937-38. In contrast to both the Semashko-Sysin proposals in 1922 and the
VGSI's proposed curbs on industrial and municipal emissions in 1937, the 1937-38 proposals represented a radical break with existing policies on the management of Soviet water resources. In addition, apart from a few short-lived experiments in the early 1930s, the proposals originated by Kenig and advanced by the VNITO group had not been tested on either a regional or national level. This lack of practical experience may have added to the leadership's unwillingness to undertake such reforms at that time.

Finally, the failure of the VNITO initiative suggests that the existence of an open window of opportunity, such as was apparently presented by the Sovnarkom's May 1937 water pollution action, does not guarantee that follow-up initiatives will succeed, even if they involve closely related issues.
CHAPTER IV

THE GENESIS OF THE 1960 USSR WATER MANAGEMENT DECISION

Following the passage of the 1937 industrial pollution control statute, the issue of water quality disappeared almost completely from the Soviet policy agenda.¹ This absence ended abruptly on April 22, 1960, when the USSR Council of Ministers adopted a major resolution on the management of Soviet water resources.²

THE DEVELOPMENT OF THE PROBLEM

By the mid 1950s, the Soviet Union's water pollution problem had become nationwide in scope and in many areas had reached critical size. Unlike the situation in the 1930s, the central press devoted extensive coverage to the issue, documenting sharply

¹The only anti-pollution legislation adopted in this period was an unpublished resolution of the Council of Ministers in May 1947 entitled "On measures for the elimination of pollution and the sanitary protection of water sources." Judging from Soviet sources, this resolution was essentially an updated version of the 1937 measure. As such, it did not represent a significant new initiative to address the water quality problem. See Gigiena i sanitariia, no. 1 (1948), pp. 1-6; T. E. Nagibina, "Zadachi sanitarnoi okhrany vodoemov" [Tasks of the sanitary protection of waterbodies], Okhrana prirody i zapovednoe delo v SSSR, no. 1 (1956), p. 42; and O. S. Kolbasov, Ekologiya: Politika-Pravo (Moscow: Nauka, 1976), p. 115. See also the corresponding resolution adopted by the Moldavian republic, in O. S. Kolbasov, comp. Okhrana prirody: Shornik zakonodatel'nykh aktov [Nature conservation: a collection of legislation] (Moscow: Gosizdat, 1961), p. 259. Such follow-up legislation often conforms closely to the original law.

²"O merakh po uporiadocheniu ispol'zovaniia i usileniiu okhrany vodnykh resursov SSSR" [On measures for regulating the utilization and protection of the water resources of the USSR], SP SSSR, 1960, no. 9, art. 67. Hereafter referred to as the 1960 resolution.
higher pollution levels in rivers and lakes throughout the USSR.\(^3\)
Numerous fish kills were also reported, including major incidents on the Kama river in 1955 and 1956, and in the Tiumen' oblast in 1956.\(^4\) This was accompanied by a sharp decline in internal fishing output, which by the mid-1950s had fallen below pre-World War II levels.\(^5\)

Much of the blame for these developments was placed on municipal officials who had failed to install proper waste purification devices. This failure was partly a result of inadequate central budget funding for sewage disposal facilities.\(^6\) Even where funds were earmarked for such purposes, less than a quarter of the planned projects were constructed. Delays of ten or more years in the completion of urban waste treatment systems were also commonplace. Industry compliance with anti-pollution requirements was equally shoddy, with many enterprises relying on settling ponds or other stop-gap measures to dispose of their wastes.\(^8\) Such practices did little to safeguard surface water


\(^4\)Izvestiia, April 12, 1956, p. 2; Priroda, no. 9 (1957), p. 59.

\(^5\)L. Minkovich, "Vazhnyi istochnik uvelicheniia rybnykh resursov" [An important source for increasing fish resources], Priroda, no. 6 (1959), pp. 81-85.

\(^6\)G. S. Gorin, "Moskovskii vodoprovod i kanalizatsiia" [Moscow's water and sewer systems], Vodosnabzhenie i kanalizatsiia, no. 11 (1957). As in the pre-WWII period, centralized funding for sewer construction in the 1950s continued to lag behind the growth of the urban population.

\(^8\)A Gosplan official reported that only 83 of the 401 industrial waste treatment facilities specified in the 1958 RSFSR economic plan were actually built. Izvestiia, April 14, 1959, p. 2.
resources and led to the contamination of soil and underground water resources.

In addition to castigating local officials, press commentaries roundly criticized the Ministry of Health (MinZdrav) for the ineffectiveness of its pollution control programs. The agency's effluent treatment standards were also lambasted for embodying the old and discredited "theory of self-purification," which many experts viewed as a major contributing factor in the spread of pollution. In addition, the system of fines and effluent charges imposed by MinZdrav for the disposal of untreated wastes was criticized as being almost entirely ineffective, since the penalties were routinely included in enterprise budgets and few of the proceeds were used for municipal sewage programs.

In addition to the rise of pollution, serious water supply difficulties came to light. The First Secretary of Cheliabinsk oblast' reported, at the Twentieth Party Congress in 1956, that the region's water supply situation was so tight that the Party obkom had to ration water daily among factories and cities. Acute shortages were also reported at the Twenty-First Congress in January 1959, prompting Khrushchev to throw his personal support behind the construction of a 500 kilometer canal to avert a water crisis.

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9 The theory had been formulated in the 1930s based on work by American sanitary engineers. It essentially relied on the mixing and dilution of wastes in the receiving stream as a substitute for artificial waste treatment. By the early 1950s, many Soviet health experts had come to view the theory as a major obstacle to progress in controlling pollution. This prompted bitter debates between the critics and MinZdrav officials responsible for incorporating the theory in Soviet effluent treatment guidelines. See V. Orlov, "Vodoemy dolzhnyi stat' chistymi" [Waterbodies must remain pure], Izvestiia, September 6, 1956, p. 2; I. Dzens-Litovskii, Priroda, no. 11 (1956); Vodosnabzhenie i sanitarnaia tekhnika, no. 7 (1957), pp. 13-19; and Gigiena i sanitariia, no. 12 (1958), pp. 39-43.

10 N. V. Laptev, Pravda, February 23, 1956, pp. 5-6. This unusual intrusion by the Party in a local governmental matter indicates how serious the problem had become.
crisis in the republic of Kazakhstan. Elsewhere, water supply difficulties were intensified by irrational forestry and agricultural practices, which caused the drying up of small rivers and the clogging of major waterways with silt and submerged timber.

By the mid-1950s these problems had become the focus of serious concern by government officials and academic experts. Joined by a common perception that existing attempts to control emissions were seriously flawed, these officials began to press for more comprehensive abatement measures.

THE CAMPAIGN FOR ENVIRONMENTAL LAWS

The need for more stringent environmental controls was first taken up by the Academy of Sciences in a widely-publicized campaign for comprehensive national and republic conservation laws (zakony po okhrane prirode). These laws sought to combat environmental pollution through blanket prohibitions against irrational resource use and other environmental abuses. Their implementation was to be entrusted to a network of special environmental control agencies which would consolidate the functions of the various departmental inspectorates for water, forests, fish stocks, minerals and other resources.

The campaign's most prominent supporter was Aleksandr Nikolaevich Nesmeianov (1899-1980), president of the USSR Academy of Sciences. Although his early writings did not foreshadow this, beginning in the mid 1950s Nesmeianov became an

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11 Pravda, February 6, 1959. Kazakhstan's request was made by D. A. Kunaev, Chairman of the Kazakh Council of Ministers, and K. I. Satpaev, President of the republic Academy of Sciences. For Khrushchev's reply, see Pravda, January 28, 1959, pp. 2-10. See also, I. Novikov, "Irtysh-Karagandinskii Kanal" [The Irtysh-Karakand Canal], Pravda, April 3, 1960, p. 4.

12 See A. N. Nesmeianov, "Preobrazovanie prirody" [The transformation of nature], Priroda, no. 1 (1952), pp. 3-4. The tone of the article was typical of the domineering,
increasingly outspoken advocate of stronger conservation laws and institutions. In an address to the Academy in 1957, for example, Nesmeianov described the squandering of the country's mineral and other natural resources as "a very acute problem" that demanded urgent countermeasures.

Yet it appears that no one is dealing with this problem on a national scale. It is hardly likely that this abnormal situation will be radically corrected in the near future unless systematic researches are initiated, taking into account the total nexus of geological, mineralogical, mining, technological and economic problems involved.

Nesmeianov reiterated his concerns in an article published in Pravda in June 1957. Although steps were being taken to combat water and air pollution, Nesmeianov noted, "it would be wrong not to see serious shortcomings in this exceptionally responsible matter." The diffusion of environmental control functions among a host of departmental inspections was pinpointed as a particularly important limitation. Under this system, drinking water supplies were supervised by the sanitary inspectors, fish resources by the fishing inspectors and forestry resources (which played a key role in regulating streamflow) by the forestry inspectors—all of whom acted independently of each other. Nesmeianov was also critical of the Ministry of Health, which he accused of "lack[ing] the powers and the means to put a stop to the actions of other departments and ministries" responsible for air and water pollution. Rectification of these failings, he argued, was essential if further severe and, possibly, irreparable environmental damage was to be averted. Nesmeianov returned to this theme in a strongly-worded article published on the eve of the Twenty-First Congress in January 1959. On this occasion, he again called upon Party and Government leaders to devote "constant and all-round concern" for the rational use of natural resources, stressing that volunteer citizen efforts, while helpful, were no substitute for decisive government intervention.

man-versus-nature philosophy of the Stalinist era.
Along with his public pronouncements, Nesmeianov provided strong support for environmental initiatives within the Academy and personally directed interagency efforts to develop environmental protection measures for the Seven-Year Plan (1959-1965). He thus exhibits all the characteristics associated with entrepreneurial bureaucratic officials in the USSR. With his wide-ranging contacts in academic, administrative and political circles, Nesmeianov was well positioned to inject the environmental issues into higher decision making circles.

Under Nesmeianov's leadership, a vigorous campaign for broader environmental laws was launched by the Conservation Commissions of the national and republic Academies of Science in 1955. These Commissions had been established by the Academy Presidium in March of that year at the suggestion of several members of the former Commission on Nature Preserves. The national Commission was headed by G. P. Dement'ev, a prominent geographer, and included representatives of numerous Academy institutes, government ministries, the All-Russian Conservation Society, and similar groups.

The first step in the Academy's campaign, ordered at the Commissions' first plenary session in May 1955, consisted of a review of existing environmental legislation. The review, completed the following year, revealed major inadequacies and led to a decision to press for new statutes on the utilization of all components of the natural environment, including water, land, air,
soil, natural landmarks and nature preserves. This decision was indicated in an article by leading Academy scientists in early 1957, which stressed that "the time has come (nazrel vopros) for putting the preservation of natural riches in proper order." The authors recommended doing this through the enactment of comprehensive environmental codes and the creation of a unified state environmental protection agency, staffed by trained inspectors at the regional and local level. Using a phrase later popularized by Brezhnev, the authors depicted the adoption of such measures as a "sacred task" (krovnoe delo) and a matter of extreme national economic importance.

Judging from an Izvestiia editorial in mid 1956, senior Party and State officials initially rejected the need for such measures on the grounds that environmental abuses were best controlled through public opinion and volunteer efforts. The soil for new legislation, however, turned out to be more fertile at the republic level, and it was here that the Academy's efforts met with considerable success. With the authorization of Nesmeianov, Shcherbakov, and Dement'ev, the conservation commissions of several republics began drafting environmental codes in early 1957. The work first reached fruition in Estonia, where I. G. Eikhfel'd, President of the Estonian Academy of Sciences, introduced into the Supreme Soviet a draft law prepared by the republic's Conservation Commission. The legislature adopted the measure with little apparent opposition in June 1957. The following month the republic government adopted a second measure, also drafted by the Conservation Commission, which established an Administration for the Conservation of Nature attached to the republic Council of Ministers.

The Estonian measures embodied traditional conservationist approaches emphasizing the removal of ecologically sensitive areas from utilization. Where this was not practicable, the development of special rules was authorized to protect particularly valuable
natural resources. Practical questions pertaining to the treatment of emissions, on the other hand, were largely passed over. Notwithstanding this limitation, the Estonian initiatives were greeted enthusiastically by the central press and the environmental community. This, in turn, prompted similar efforts in other republics.

Nesmeianov, however, viewed the republic statutes as only a first step in the improvement of national policies and institutions. This conviction was evident in his 1957 Pravda article, which noted that "in scientific and public circles the question of further improving [all-union conservation] legislation is being discussed at the present time"—implying that a national-level initiative was already well underway. The existence of the initiative was confirmed in early 1958 when D. I. Shcherbakov reported that a USSR conservation statute was being prepared within the Academy at that very time. This was followed by an announcement at the June 1958 all-union environmental congress in Tbilisi that a draft USSR conservation law had been sent to higher instances, presumably including the USSR Council of Ministers and the Supreme Soviet.

Over the next several years, the Academy's draft law received support from a wide range of groups and institutions. The Tbilisi

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16 In addition to establishing new nature preserves, the Estonian conservation law extended republic control to "objects of nature (parks, plants, rivers, lakes, and so forth) which . . . need protection for scientific, cultural, or aesthetic considerations." Violators were subject to jail sentences of up to two years. Ibid., p. 330.

17 The Moldavian Conservation Commission forwarded a environmental code to the republic Council of Ministers in 1957. The measure was passed in 1959. Similar initiatives were introduced in Latvia, Lithuania and elsewhere. Such measures, however, often met with concerted opposition and lengthy delays. As a result, by 1960 seven of the fifteen union-republics had still not adopted conservation laws, with the most notable holdouts being the larger republics, including the RSFSR and the Ukraine. For a summary and analysis of the republic conservation laws, see O. S. Kolbasov, Ekologiia: Politika-Pravo [Ecology: Policy and Law] (Moscow: Nauka, 1976), pp. 119-28.
environmental congress passed a resolution characterizing the law as an "urgent state task." Support also came from Gosplan's Commission for the Preservation and Renewal of Natural Resources, which included the passage of such a law and the creation of a national environmental control agency among a package of measures recommended for inclusion in the Seven-Year Plan. In early 1960, a major conference of Soviet geographers added its approval, citing the proposed measures as the most effective means of eradicating serious obstacles in the path of rational environmental management.

Thus by the late 1950s, Nesmeianov and other leading Academy officials had successfully placed the issue of controlling water pollution and other environmental abuses on the agenda of several republics and had begun to make headway in promoting environmental change at the national level. The growing sensitivity to environmental problems generated by the Academy in turn spawned specific proposals to combat water quality problems. The most important of these is examined in the following section.

PROPOSALS FOR INTEGRATED WATER MANAGEMENT

After the failure of the Stroganov and Sysin initiative in 1937-1938, the issue of integrated management of water resources continued to percolate within the research community.\(^\text{18}\) These discussions helped keep the issue alive and set the stage for a second attempt to foster water management reforms in the mid-1950s. The sponsor of the latter initiative was Vasilii

\(^{18}\)See V. I. Turichnovich and M. I. Lapshin, Osnovy regulirovaniia kachestva vody [Fundamentals of the regulation of water quality] (Moscow: AN SSSR Sektsiia po Nauchnoi Razrabotke Problem Vodnogo Khoziaistva, 1950), pp. 92-93. The authors urged that "every water source or waterbody . . . along with its catchment basin be considered a [single] water management complex," and be developed by an appropriate institution charged with "the planned management of the quantitative and qualitative aspects of the basin's water resources," p. 93.
Vasil'evich Zvonkov (1890– ). A transportation engineer with extensive experience in the design of large-scale water projects, Zvonkov held a series of influential positions in the scientific hierarchy during the 1940s and 1950s: vice director of the Section on Transport Problems; member of the Council for the Study of Productive Forces (SOPS); President of the Academy's East-Siberian branch; and member of the scientific-technical council of the State Committee for New Technology (Gostekhnika).

After completing these assignments, Zvonkov returned to full-time involvement in water resource matters in 1956, when he was appointed as the USSR's representative on an international Experts Panel on the integrated management of water resources. The panel had been established by the Economic and Social Council (ECOSOC) of the United Nations to examine the administrative, economic and social dimensions of multipurpose river basin development, and to prepare recommendations for international scientific exchanges. ¹⁹ Participation on the panel apparently had a major impact on Zvonkov, for upon his return from the January 1957 ECOSOC session, he became the country's leading advocate of multipurpose water management systems.

Zvonkov first argued the need for a reorganization of the water industry in an article in the Academy's journal in mid 1957. The article stressed that the USSR's rapidly expanding water demands could only be satisfied through a "more economical, integrated utilization of water resources," based on the fullest possible consideration of the requirements of all water users. In Zvonkov's view, a comprehensive approach was especially critical in the treatment and disposal of effluents, where

not only must more effective methods of purifying effluents be developed, but there must also be a significant


Zvonkov proposed that the centerpiece of the planning process should be the development of comprehensive plans and designs (plany-skhemy) for entire river basins and river systems.

Such plans must incorporate an assessment of the quantity and quality of available water supplies and of the volumes of water required for various economic purposes. These plans must serve as the foundation of further detailed planning of [all] corresponding water management facilities.

The article concluded with a recommendation that the Academy strengthen its research on water resource questions and devote top priority to the most rapid possible introduction of integrated water management principles as the basis for resolving the nation's mounting water resource difficulties.

The Academy Presidium accepted this proposal, and in late 1957 appointed Zvonkov to head its newly-established Council on Water Management Problems (Sovet po Problemam Vodnogo Khoziaistva), which was charged with coordinating all Academy and ministry research on water planning and development. During the next several years, Zvonkov used this Council as a vehicle for developing his proposals and mobilizing support for them among government institutions. His first step was to reorient the Academy's water research away from a multitude of narrow technical studies and toward the completion of policy-related analyses and assessments. This was accomplished at the Council's coordinating

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20 The Council was the successor to the Academy's Section for the Scientific Elaboration of Water Management Problems. The Section had been set up in 1939, apparently in response to the proposals by the Stroganov group. With the exception of a 1950 monograph on water quality and the compilation of a preliminary water resource survey (vodnyi kadastr) in 1956, the section's initial efforts were limited to the study of stream hydrology, flood control and similar technical matters. See I. A. Kuznetsov, "Razvitie issledovaniia v oblasti vodnogo khoziaistva [The development of research on water management]," Vestnik ANSSSR, no. 3 (1957), pp. 125-27; and E. V. Blizniak, ed., Vodokhoziaistvennyi kadastr SSSR (Metodika sostanovleniia) [The Water Management Survey of the USSR (Methodology of Compilation)] (Moscow: AN USSR, 1956).
session in December 1958, when it was decided to focus Academy research on "the elaboration of principles and methods for the integrated utilization of water resources," and the adaptation of such principles to the problems of various geographical regions. In early 1959, a comprehensive research plan was developed to guide these efforts. The application of an integrated approach to hydropower development was then discussed at a major conference on the operation of the Kama reservoir on the Volga in April 1959. This gathering, the first wide-ranging examination of the economic and environmental dislocations caused by Soviet hydropower development, produced a broad interagency consensus on the need for a more balanced approach to the design, construction, and operation of hydroelectric power plants.

Finally, Zvonkov drew up a full-scale report identifying the legal and institutional changes needed to begin the transition to a system of multipurpose water development. The report was contained in a collection of articles edited by Zvonkov which was published by the Academy in March 1960. The urgent tone of the report, and the prominence given to its policy recommendations, make it clear that Zvonkov intended the document to be read by individuals with decision-making authority. Zvonkov began his article by affirming the principle of multipurpose water resource management as an idea whose time had come.

For a long time, practically to the present day, [water] use bore a branch character, i.e., was carried out for a single purpose ... However, along with the expanded construction of water management facilities, the idea has taken hold that the utilization of water resources must have a multi-branch, integrated character wherever this is technically and economically feasible.

The need for multipurpose water use was underscored, Zvonkov noted, by the growing water shortages gripping the Urals, Kazakhstan, the Donbass, Western Siberia, "and such large cities as Moscow and Ivanovo," where existing water resources were "already insufficient" for industrial and domestic needs. A comprehensive approach was particularly essential to resolve the trade-offs involved in large-scale water transfer projects,
including the Donets-Donbass, Irtysk-Karaganda and Dnepr-Krivoy Rog canals, and the proposed Kama-Vychegda-Pechora river diversion project. A third critical imperative was the need to stem the escalation of water pollution, which in Zvonkov's words was inflicting "enormous, incalculable harm on the population," major losses to agriculture, and upwards of 3 billion rubles per year in damage to the fishing industry.

In these circumstances, the protection of water bodies demands constant attention, uninterrupted accounting and control of all changes occurring in [them], and constant regulation of water use. This applies not only to the protection of water bodies from pollution but also to their protection from obstruction and exhaustion, and the protection of underground waters as well.

Zvonkov outlined three "top-priority" measures to resolve the above difficulties. The first was a greatly expanded research program aimed at developing water surveys (kadastr), water-management balances (vodokhoziaistvennye balansi), cost-benefit analyses and long-range multipurpose use plans (perspektivnye kompleksnye skhemy) for all major river basins and economic regions. Pollution abatement was to be a major component of such plans, which were to encompass,

the organization of systematic accounting of all instances of actual and potential pollution . . . The elaboration of plans and designs indicating the most rational measures for protecting water resources, the amount of construction work, the scale of the needed capital investments . . . [and] deadlines for building the indicated facilities.

Zvonkov's second proposal was the adoption of sophisticated legal provisions for regulating the use and protection of water resources throughout the USSR. Such legislation, Zvonkov

21 The latter was a plan to divert part of the flow of the Vychegda and Pechora rivers into the Kama, a tributary of the Volga. The project was developed by Gidroproekt (the hydropower engineering agency of the Ministry of Electric Stations) in the late 1950s as part of a comprehensive effort to restore the Caspian Sea to its earlier level. For a detailed discussion of the Caspian problem, see Philip Micklin, "The Falling Level of the Caspian Sea," Soviet Geography: Review and Translation XIII (November 1972): 589-603.
stressed, must go beyond purely "prohibitive (zapretitel'nye)" measures and incorporate concrete guidelines concerning the reduction of emissions by industrial, agricultural and municipal water users. Zvonkov further counselled against repeating the mistakes of the Health Ministry's emissions regulations, which he characterized as providing "permanent authorization to discharge effluents" without any consideration for reducing wastes by means of recirculating water systems and other non-polluting technologies.

It must be noted that the problem of protecting water resources against pollution usually permits not one but several solutions. The most prevalent solution, involving the treatment of wastes prior to their discharge into a water body, is far from the most reliable, since the treatment facilities can fail to operate due to overload, changes in the composition of the wastes, . . . and lack of the necessary reagents.

Zvonkov's third proposal was for the establishment of a new government agency, adequately financed and "endowed with appropriate powers and authorities," to take charge of the regulation and protection of water resources.

Public support for these ideas came from many of the same groups and institutions which backed the Academy's conservation law proposals. Gosplan indicated its support in an article by a senior economist published in Izvestiia. The article repeated Zvonkov's key recommendations almost verbatim, including the call for systematic accounting and planning of water resources, the preparation of a comprehensive Genskhema for the country's river basins, and the creation of a government agency for the use and protection of water resources. Further support was provided by M. I. L'vovich, senior hydrologist of the Academy of Science's Institute of Geography and a leading figure in the All-Union Geographical Society. In a report to the Society's 1960 all-union congress, L'vovich stressed that

only an integrated water management balance (vodokhoziaistvennyi balans) and integrated planning can ensure the rational utilization of water resources in accordance with the requirements of the national economy.
Comprehensive planning efforts were also advocated by S. L. Vendrov, a Moscow University expert on the environmental impacts of hydropower development. Speaking at the 1960 geographers' congress, Vendrov urged the immediate compilation of a national water survey as the first step toward drafting a "unified scientific water management plan." Such a plan, he stressed, was needed to ensure proper management of the Soviet Union's water resources "and to prevent the reckless and thoughtless utilization of such resources."

Zvonkov also utilized the press as a sounding board for his water management proposals. In July 1959, Izvestiia printed an article which bore unmistakable imprints of Zvonkov's ideas. In addition to urging the installation of closed-cycle water systems, the article made a strong pitch for the establishment of basin-wide water management institutions. Although several republics had recently established special environmental committees, the article asserted that such bodies will not solve the whole problem of protecting waterbodies. After all, many rivers flow through the territory of several republics. Consequently in the basin of one river there are several masters. But there must be only one master. It would be more correct, therefore, to establish basin-wide inspectorates, rather than inspections for each administrative region. Without the permission of these inspectorates not a single industrial enterprise should be constructed.

Zvonkov also appears to have inspired the publication in Komsomol'skaia pravda of another detailed expose on the water pollution problem in April 1960. The article repeated many of Zvonkov's recommendations, including the proposal for a comprehensive water resource plan and the creation of basin-level management institutions. The piece was accompanied by an article written by Zvonkov which made the same points even more emphatically.

The efforts by Zvonkov and others to promote more vigorous anti-pollution measures did not go unnoticed by the Soviet policy makers. The first sign of heightened official interest in the problem came in November 1959, when the USSR Council of Ministers
adopted a resolution on the use and protection of underground water resources. Included were more stringent restrictions on the discharge of industrial and municipal wastes into wells and other places which could lead to the contamination of underground water supplies. A further indication of leadership concern was provided in a report to the Third Congress of the All-Union Geographical Society in early 1960. The report noted that in the period preceding the Congress, the Society's Moscow branch had

played an active part in drafting a conservation law for the RSFSR; [and] the Buriat branch and the East Siberian and Baikal sections, supported by the Society as a whole, [had] campaigned successfully for the preservation of Lake Baikal and its natural resources."

The congratulatory tone of the statement indicates a prior knowledge that legislation on such matters was forthcoming, suggesting that these and other environmental measures may have been taken under review in the latter part of 1959.

Conclusive evidence of the issue's placement on the agenda came on April 22, 1960, when the Sovnarkom issued a wide-ranging resolution on the management of water resources and the regulation of water pollution. The resolution transferred responsibility for controlling emissions to a network of republic and basin-level agencies for the rational use and protection of surface and underground water resources. It also created special departments within the USSR and republic Gosplans to coordinate water management and ordered the preparation of a comprehensive long-range plan (general'naia perspektivnaia skhema, or Genskhema) to guide the multipurpose development of the USSR's water resources. These actions marked a major expansion of Soviet water pollution control efforts as well as the implementation of many of the principles advocated by Soviet water experts since the 1920s.

CONCLUSIONS

The April 1960 water management decision was a third important issue placed on the agenda largely through the efforts of Soviet agency officials. The driving force behind the issue
was Academy official V. V. Zvonkov. Zvonkov had formulated comprehensive water quality reform proposals in the late 1950s and was aggressively lobbying for them in leadership circles. Coinciding with the emergence of critical water supply difficulties, Zvonkov's actions were apparently instrumental both in persuading policy makers to address the USSR's water problems and in shaping key elements of their response. The initiative was apparently transmitted to the policy makers through internal Academy channels and was likely aided by concerns over growing water shortages. The proposal was also broadly consistent with political realities at the time. On these grounds, the initiative supports all three hypotheses on the agenda setting process set forth in this study.

This case thus further underscores the role of entrepreneurial officials in shaping the Soviet agenda concerning specialized policy matters. Zvonkov's success in this regard was closely related to his ability to mould a small research council into a source of policy-relevant advice. It came in spite of failure of the ministries directly responsible for water quality to play any significant role in the campaign for the 1960 law. This was an unexpected finding. Given NKZdrav's pivotal role in the 1922 and 1937 decisions, we fully expected officials of the ministries of health, communal services and fishing to be among the leading advocates of a strengthening of these earlier controls. This expectation was initially borne out at the Twentieth CPSU Congress in 1956, when M. D. Kovrigina, then USSR Minister of Health, launched a blistering attack on the "scandalous" condition of the nation's water resources and urged a review of current policies in order to improve the effectiveness of water quality regulations. 22 MinZdrav officials, however, 

22Pravda, February 28, 1956, pp. 8-9. Kovrigina's deputy for water pollution matters was similarly outspoken at the time. See T. E. Nagibina, "Zadachi sanitarnoi okhrany vodoemov" [The sanitary protection of waterbodies], Okhrana prirody i zapovednoe delo v SSSR, no. 1 (1956), pp. 36-46. See as well the strongly-
subsequently became much less outspoken and appear to have played little or no role in proposing environmental policy changes for the remainder of the decade.23

This low profile appears to have been part of a deliberate effort to protect the agency's programs from being reduced or dismantled.24 In this instance, concerns for bureaucratic survival, rather than spurring policy initiation, apparently triggered a defensive posture aimed at raising as few doubts as possible about the ministry's ability to discharge its effluent control responsibilities.

A similar dynamic was evidently in effect within the Ministry of Fishing which, despite the severe impact of pollution on domestic fish output, also played no visible role in initiating

worded editorial in MinZdrav's journal, "Usilit' bor'bu za vypolnenie reshenii XX S"ezda KPSS v sanitarnoi okhrane vodoemov" [Editorial: Strengthen the struggle for the realization of the decisions of the Twentieth CPSU Congress on the sanitary protection of waterbodies], Gigiena i sanitariia, no. 3 (1957), pp. 3-6.

23S. V. Kurashov, who took over as Minister of Health in 1959, was especially non-committal in his public statements about water pollution. See, S. V. Kurashov, "Zabota za zdorov"e naroda" [Concern for the people's health], Pravda, February 18, 1960, p. 3.

24MinZdrav was put on the defensive in the late 1950s when a group of dissident health officials mounted a widely publicized attack on the water quality standards developed by S. N. Cherkinskii. See Ia. M. Grushko, "Vazhn Ye voprosy okhrany vodoemov: O normakh dopustimykh kontsentratsii vrednykh veshchestv v vode" [Important questions concerning the protection of waterbodies: On the norms of the permissible concentrations of harmful substances in water], Priroda, no. 7 (1959), pp. 47-50; and V. Orlov, Izvestiia, June 6, 1956, p. 2. Cherkinskii sought to parry the attacks by mobilizing the ministry's editorial boards and expert committees in defense of the current standards. See, "Postanovlenie Biuro Otdeleniia Gigieny, Mikrobiologii i Epidemiologii Akademii Meditsinskikh Naukh ob itogakh diskussii o sanitarnoi okhrane vodoemov" [Resolution of the Bureau of the Department of Hygiene, Microbiology and Epidemiology of the Academy of Medical Sciences, on the results of the discussion on the sanitary protection of waterbodies], ibid., no. 8 (1958), p. 85. MinZdrav officials, however, were unable to silence the critics, who continued to publish negative assessments of existing effluent regulations well into the 1970s.
the 1960 measures. The explanation appears to lie in the ministry's shift to ocean fishing in the 1940s and 1950s. This enabled the agency to meet its production quotas despite a severe decline in the catch of commercial fish from the Caspian Sea and other internal fishing reservoirs.

The unexpectedly passive stance of these two agencies underscores the importance of self-protection and other internal disincentives in restraining bureau policy initiation in the USSR. Such inhibitions were clearly much weaker in the Academy of Sciences, reflecting the agency's commitment to scientific research as well as the presence within its leadership of environmentally-conscious administrators such as Nesmeianov and Zvonkov. The Academy's deepening environmental role is further illustrated in the following chapter, which examines three key policy initiatives of the late 1960s and early 1970s.

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25In the 1950s, researchers at the Institute for River and Lake Fishing (GosNIORKh) tried to drum up interest in the problem. See L. S. Berdichevskii, "Bor'ba s zagriazneniem vodoemov (Soveshchanie po voprosam vliiania stochnykh vod na rybnoe khoziaistva" [The struggle with the pollution of waterbodies (Conference on the influence of waste waters on the fishing industry)], Vestnik AN SSSR, no. 6 (1957), pp. 111-14; and M. N. Zadubin, Okhrana rybokhoziaistvennykh vodoemov ot zagriaznenia promyshlennymi stochnymi vodami i drugimi otbrosami [The protection of fishing-industry waterbodies from pollution by industrial wastes and other refuse] (Moscow: Fishchepromizdat, 1958). These efforts notwithstanding, senior fishing officials remained largely disinterested in the pollution problem.

CHAPTER V

WATER POLLUTION BECOMES A REGULAR AGENDA ITEM:
THE 1968-72 ANTI-POLLUTION DECISIONS

INTRODUCTION

The 1960 water management decision prompted major improve-
ments in the control of water pollution in the USSR.1 Within a
year of its adoption, all fifteen union republics had formed
special agencies to coordinate water resource planning and
regulate industrial and municipal emissions.2 By 1965, these
agencies had created regional inspections in half of the country's
largest river basins and acquired a professional staff of over
1,400 persons. In that year, the basin authorities reviewed the
designs for some 9,000 effluent treatment facilities and partici-
pated in acceptance commissions for over 1,000 new enterprises.
In Leningrad and other industrial centers, they conducted basin-
wide inspections which provided the first systematic data on water
quality since the 1930s.3 The new agencies also actively promoted
the assimilation of low-waste technologies, reflecting the growing
acceptance of ideas pioneered by Zvonkov. In addition, they helped
modify the operating rules of large hydropower projects, helping

1P. N. Shternov, "Okhrana vodoemov SSSR ot zagriazneniia"
[Protecting the USSR's waterbodies from pollution], Vodnye
ressursy, no. 1 (1972), p. 163. Shternov headed the State
Inspection for Protecting Water Sources of the USSR Ministry of
Land Reclamation and Water Management (Mindvodkhoz) in the mid-
1960s and 1970s.

2Most republics established State Committees for the
Multipurpose Use and Protection of Surface Water Resources. In
Belorussia, a State Committee for Environmental Protection was
created with responsibility for supervising all natural resources.

3See N. F. Fedorov, et al. in Materialy vsesoiuznoi nauchno-
tekhnichestkoi konferentsii po okhrane poverkhnostnykh i podzemnykh
vod ot zagriazneniia [Materials of the all-union scientific-technical
conference on the protection of surface and underground
to improve water quality during low water months. Finally, new statutes were adopted clarifying the role of the local sanitary inspectors in pollution control, addressing another long-standing problem pinpointed by the April 1960 resolution.

As a result of these reforms, by the mid 1960s Soviet officials were able to report improvements in water quality along the middle Volga, the Don, the Dnepr, and other areas. Few observers, however, harbored any illusions that republic and local measures alone could reverse the damage caused by decades of neglect and underinvestment. Thus, in addition to implementing the 1960 statute, Soviet water officials also actively lobbied for more stringent controls within leading policy circles.

Notwithstanding these efforts, the issue of water pollution did not return to the national decision agenda until after the removal of Khrushchev as Party leader in October 1964. This reflected three factors. The most important was the succession of domestic and foreign policy crises which beset the USSR from mid-1960 on. These difficulties—which included major foreign policy setbacks, successive crop failures, and a sharp decline in industrial performance—absorbed much of the leadership’s energies, crowding other, less immediate concerns from the agenda. Access to the governing bodies was further hindered by the sweeping policy initiatives mounted by Khrushchev in response to

4 The new operating rules were set forth in 1961 by the RSFSR Gosvodkhoz. See Polozhenie o poriadke ispol'zovaniia vodnykh resursov vodokhranilishch RSFSR [Statute on the procedure for utilizing the water resources of reservoirs of the RSFSR] (Moscow: Gosvodkhoz RSFSR, 1961).

5 Pravila okhrany poverykhnostnykh vod ot zagriazneniia stochnymi vodami [Regulations for the protection of surface water resources from pollution] (Moscow: Ministerstvo Zdravoookhranenia, 1961). This statute was drafted by S. N. Cherkinskii's Committee for the Sanitary Protection of Waterbodies. It replaced similar rules adopted in 1954.

these policy challenges. The agricultural community was particularly disrupted by Khrushchev's ill-prepared scheme to expand agricultural irrigation. In conjunction with this project, the functions of the republic water management agencies (known as gosvodkhozy) were expanded to encompass the design and implementation of all large-scale irrigation and drainage projects in their respective regions. While increasing their bureaucratic standing and influence, the additional responsibilities limited the ability of gosvodkhoz administrators to focus on water pollution. Consequently, by the end of the Khrushchev period, their influence as policy initiators had been sharply eroded.

A third key agenda barrier during the early 1960s was Nikita Khrushchev's personal disinterest in the environment and his rejection of formal restraints against ecological abuses. This had an especially detrimental effect on Lake Baikal. According to reports published after his removal, the First Secretary was so incensed by the resistance to the proposed pulp mills at the lake that he banned further debate on the issue from 1962 on. As a result, no major decisions were adopted on Baikal or related matters for the remainder of his time in office.

With the advent of the Brezhnev-Kosygin leadership in October 1964, environmental pollution again became the focus of wide-ranging debate. The intensity of the debate quickly surpassed that of all previous Soviet environmental controversies. Once again, the central role in promoting new policy undertakings belonged to activist officials of bureaucratic and scientific institutions. On this occasion, however, the issues found a receptive climate among leadership circles. The turning point came in 1967-68, when high-level resistance to vigorous anti-

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pollution measures finally crumbled, allowing environmental issues direct access to the ruling bodies.

Unlike previous occasions, the agenda opening of the late-1960s was relatively long-lived. During this interval—which lasted until the mid-1970s—the Party and Government leadership adopted a series of landmark decisions which elevated water quality to the status of a major national priority. The most important of these were:

- "Additional measures for the protection of Lake Baikal," USSR Council of Ministers, February 1969. 8
- "Fundamentals of water legislation of the USSR and the Union Republics," USSR Supreme Soviet, December 1970. 9
- "On preventing pollution of the Volga and Ural River basins," CPSU Central Committee and USSR Council of Ministers, March 1972. 10
- "On further improving nature protection and the rational use of natural resources," USSR Supreme Soviet, September 1972. 11
- "On strengthening the protection of the natural environment," CPSU Central Committee and USSR Council of Ministers, December 1972. 12

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9 Vedomosti Verkhovnogo Soveta SSSR, 1970, no. 50, art. 566. Also, Pravda, December 12, 1970, pp. 2-3; trans. in Current Digest of the Soviet Press, XXII, no. 52, pp. 7-12; hereafter referred to as CDSP.

10 Sobranie postanovlenii Pravitel'stv SSSR [Collected resolutions of the Government of the USSR] 1972, no. 5, art. 30; hereafter, SP SSSR.


12 SP SSSR, 1973, no. 2, art. 6. Also, Resheniia, vol. 9, pp. 347-76.
The new legislation was accompanied by a sharp rise in environmental spending. As shown by Table 1, budgetary allocations by the central government quadrupled between 1970 and 1975—twice the rate of the preceding decade. A major share of the increase—approximately a billion rubles in 1972-75—went for the construction of effluent treatment facilities in the Volga basin.

Table 1

USSR: Central Budgetary Allocations for Environmental Protection

<table>
<thead>
<tr>
<th>Year</th>
<th>Million rubles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>110</td>
</tr>
<tr>
<td>1970</td>
<td>451</td>
</tr>
<tr>
<td>1971</td>
<td>528</td>
</tr>
<tr>
<td>1975</td>
<td>1,800</td>
</tr>
</tbody>
</table>


The period also witnessed a major expansion of the administrative apparatus for controlling water quality. By the mid-1970s, the network of basin agencies encompassed all of the USSR's key river basins (see Table 2).
Table 2

USSR Regional Water Management Agencies

<table>
<thead>
<tr>
<th>Year</th>
<th>Basin Inspections</th>
<th>Hydro-chem. Labs</th>
<th>Total Staff</th>
<th>Objects Controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>49</td>
<td>68</td>
<td>1431</td>
<td>38,200</td>
</tr>
<tr>
<td>1973</td>
<td>86</td>
<td>77</td>
<td>3000</td>
<td>84,000</td>
</tr>
<tr>
<td>1974</td>
<td>102</td>
<td>94</td>
<td>4371</td>
<td>91,430</td>
</tr>
</tbody>
</table>


Another important change was the widening Soviet participation in international environmental activities. The centerpiece of these activities was a broad program of U.S.-Soviet bilateral research on water management, signed at the Moscow summit in 1972.

Simultaneously, issues of water quality and environmental pollution became firmly institutionalized in the governmental, social and education systems. The process included the creation of major new research institutes; consolidation of environmental monitoring functions in the expanding Hydrological and Meteorological Service (Gidrometsluzhba); inclusion of a separate section on environmental protection in the 1971-75 USSR Five-Year Plan; and the addition of conservation courses to the secondary school and university curricula. Finally, in 1977, commitment to preserving the environment was written into the new Soviet Constitution.

By the early 1970s, therefore, the water quality issue had clearly been transformed into a what Walker terms a "recurring
Unlike discretionary items, which reach the agenda mainly as a result of crises or ad-hoc initiatives by individual leaders, recurring problems flow more or less predictably from past decisions.

The rest of this chapter examines how the water pollution issue became a regular agenda item in the early years of the Brezhnev regime. Three key initiatives will be addressed: (1) the codification of Soviet water legislation; (2) the protection of Lake Baikal; and (3) the comprehensive environmental resolutions adopted in 1972.

THE CODIFICATION OF WATER LEGISLATION

Like the previous issues, the reform of Soviet water legislation progressed to the agenda in a series of stages. The issue was first raised in the late 1950s by a group of Uzbek legal scholars specializing on agricultural law. In 1958, as part of the rejuvenation of Soviet law after Stalin's death, these jurists formulated a draft land-water code for their republic. Although primarily aimed at improving the use of water for irrigation, the draft also contained measures to stem pollution by farms and factories. The draft code was favorably received at a 1959 conference in Tashkent, sponsored by the Legal Department of the Uzbek Academy of Sciences and the Institute of State and Law (IGPAN) of the USSR Academy of Sciences. Shortly thereafter, the Presidiums of the Uzbek and Kazakh Supreme Soviets formed legislative drafting committees to develop formal proposals for submission to republic authorities. These actions were apparently sponsored almost entirely by republic officials, since apart from

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Central Asia and Belorussia, no coordinated nationwide codification program was launched at the time.\textsuperscript{14}

The codification initiative quickly attracted attention in Moscow. In 1959, the All-Union Institute of Legal Sciences and the Codification Department of the RSFSR Ministry of Justice drafted a water code for the Russian republic. This document was approved by the Ministry of Justice and circulated among leading agricultural agencies for comments. Simultaneously, Izvestiia published an article recommending the adoption of a similar overhaul of all-union water legislation.

The movement broadened significantly in 1961 when IGPAN held a major conference to coordinate the legislative drafting efforts underway in the various republics. The conference was organized by Georgii A. Aksenok (1911 – ), a corresponding member of the Academy of Sciences who headed IGPAN's department of land law. Aksenok was then the USSR's foremost expert on natural resource law and a leading conservation advocate. He was widely known within higher Party and Government councils, as illustrated by his frequent service as a consultant to the Legislative Proposals Committees of the Supreme Soviet.\textsuperscript{15}

Under Aksenok's leadership, the 1961 conference produced broad agreement on the need for unified national and republic statutes on the use and protection of water resources. Aksenok also provided a rough outline of the proposed law, which he believed should take the form of "Fundamentals of Water Legislation" (Osnovy vodnogo zakonodatel'\textsuperscript{stva}, or Osnovy) for the USSR.

\textsuperscript{14}A draft land-reclamation code was also undergoing inter-agency review in Belorussia in the late 1950s. T. Basov, "O pravovom regulirovanii i okhrane vodnykh resursov v Belorusskoi SSR" [On the legal regulation and protection of the water resources of the Belorussian republic], ibid., pp. 135-46.

\textsuperscript{15}An article commemorating Aksenok's 60th birthday stated that he had "systematically participated" in the work of the legislative commissions of both chambers of the Supreme Soviet. The article further noted that his proposals "were reflected in the preparation and adoption of laws on land" and other natural resources. Vestnik AN SSSR, no. 2 (1971).
This would be followed by the enactment of detailed codes (kodesy) for each union republic. Aksenonok's proposed draft was strongly supported by many conference participants, including RSFSR Gosvodkhoz chief Kornev, who argued that it would go a long way toward correcting the "basic cause" of the country's pollution problems. Officials from the republic gosvodkhozy were also strongly supportive of Aksenonok's proposal to establish an all-union State Committee to direct water management for the entire USSR.

Aksenonok's initiative was paralleled by a second codification effort sponsored by Gosplan's Department of Water Resources. This department, one of the institutions established by the 1960 water management resolution, was headed at the time by Iurii V. Aleksandrovskii, who had also participated in the 1961 IGPN conference. Gosplan established a panel to draft a new water law in 1962. The draft was completed by the end of the year, and thereafter was circulated among interested agencies.

Thus, by late 1962 the movement to codify Soviet water law had garnered support from important segments of the legal and bureaucratic community. Given the passage of a major water decision only two years earlier, it appeared only a matter of time before either the Academy or Gosplan proposals reached the agenda. During the next several years, however, neither initiative attracted high-level attention. The reasons included leadership preoccupation with other matters and Khrushchev's personal disinterest in environmental problems. An added factor was the failure of the legal community to coalesce around a specific policy proposal. In the months following the 1961 conference, consensus on the need for a new water law gave way to pervasive disagreements over the form and content of the proposed statute. Particularly heated conflicts arose over the proper division of functions between the national and republic governments. A further legal conference was held in 1963 to iron out these differences, but it failed to produce solid backing for any single proposal. Thus, to the extent that senior officials expressed
interest in the issue, the lack of consensus among legal experts hindered development of a coordinated proposal for official consideration.

The need for further legal research prompted Oleg Stepanovich Kolbasov, then a senior researcher at the All-Union Institute of Juridical Sciences in Moscow, to turn his full attention to the subject of water legislation in 1962. Kolbasov, a graduate of the Tomsk University law faculty, had established his environmental credentials by editing the first compendium of Soviet conservation legislation the preceding year. During the next several years, his scholarly output included a series of original articles and books and a comprehensive monograph on the codification of Soviet water law.

In addition to his research, Kolbasov actively promoted water law codification within higher Party and State organs. His entrepreneurial skills were particularly evident in early 1964, when he published an article in Izvestia urging a renewed effort to reform Soviet water legislation. Recognizing that the climate was not propitious for serious environmental initiatives, Kolbasov couched his appeal largely in terms of the payoffs for farm production. In this way, he placed the water issue squarely in the context of the just-completed Central Committee plenum on agriculture.

Kolbasov's proposal appears to have found a receptive audience. In July 1964, the Commission of Legislative Proposals of the USSR Supreme Soviet established a "deputies preparatory committee" to begin work on a new water statute. To advise the committee, an expert subcommittee was created, consisting of approximately fifty scholars, agency officials and water resource specialists. Kolbasov was appointed staff director (uchenyi

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16 The main thrust of the article was that existing water law was almost exclusively oriented toward extensive rather than intensive farming. Thus, it failed to promote the increased efficiency in land and water use that was essential in the conditions of the 1960s.
sekretar')], giving him overall responsibility for the drafting effort. The creation of this committee signifies that the issue of water law codification had gained access to a portion of the Supreme Soviet's agenda. Further confirmation of this came in December 1964, when the committee's 1965 work plan was approved by the legislative proposals committees of both chambers of the legislature. The issue had survived the leadership changeover the preceding October and was now advancing higher on the national agenda.

During the next 18 months, Kolbasov's panel debated the broad outlines of the proposed law. This was a vulnerable stage in the codification process, since the initiative had not yet been formally endorsed by the new leadership. Two developments, however, helped clear the way for its entry onto the Politburo's decision agenda. The first was Brezhnev's personal endorsement of long-overdue improvements in farming practices--so-called "intensification measures"--in his speech to the March 1965 Central Committee plenum on agriculture.17 "In the first place," he stated, "it is necessary to establish proper order in the area of land use, to put an end to instances of a squandering and predatory relationship to land." The speech also advocated "elaborate measures" for combatting soil erosion, a subject which environmentalists had unsuccessfully pressed for years. Brezhnev spoke out again on the subject at the 23rd Party Congress in March 1966.

The land is an enormous source of wealth for society and the basis of our agricultural production. Preserving this wealth and its productive utilization, raising soil fertility, the struggle against wind and water erosion, and the carrying out

17A key element of these measures was a program of land reclamation and irrigation intended to free Soviet agriculture from the caprices of the weather and ensure stable and increasing crop yields. Its goals were a three million hectare increase in irrigation in Central Asia, southern Russia and the Ukraine; and drainage of six million hectares in Belorussia and the non-black earth region of the northwestern RSFSR. In contrast to Khrushchev's irrigation efforts, Brezhnev's program was buttressed by a sharp rise in farm prices and an unprecedented increase in capital investment. See Gustafson, Reform in Soviet Politics, pp. 25-33.
where necessary of reforesting work, must be viewed as an important governmental matter.

Brezhnev's remarks signalled a new openness within the leadership to the reform of land and water management. This created an potentially receptive climate for improvements in water legislation, a subject directly bearing on the reclamation program.

The second breakthrough came in early 1966 when the codification of natural resource law gained the support of Nikolai Podgorny, who had been designated Chairman of the Presidium of the USSR Supreme Soviet in December 1965. Podgorny's support was clearly expressed at the March 1966 Party Congress, when he declared that the time had come to bring our legislation on the procedures for utilizing the land, mineral resources, forest and water resources and other questions into conformity with the demands of the present day.

Podgorny's interest in natural resource law appears to have been related to his support for improvements in consumer welfare, which--like the environment--had also been long overshadowed by the Stalinist preoccupation with heavy industry. In a speech in Baku in May 1965, Podgorny had declared that this lopsided priority structure was no longer acceptable to contemporary Soviet society.

There was a time when the Soviet people consciously accepted material restrictions for the sake of the priority development of heavy industry and the strengthening of our defense capacity. That was fully justified. ... But now collective wealth is multiplying year by year, while conditions are emerging that make it easier to satisfy the ever-growing material and cultural needs of the working people.

As witnessed by the growing media interest in conservation during this period, the public's "material and cultural" needs clearly encompassed a desire for a more livable natural environment.

Podgorny was also a supporter of the economic reform measures that had been adopted in September 1965 under the sponsorship of Council of Ministers Chairman Aleksei Kosygin. This suggests a further point of agreement with proponents of more rational management of water and other natural resources.
Finally, following his demotion to the largely ceremonial position of head of state, Podgorny appears to have been searching for issues to exploit as a means of retaining influence within the ruling coalition. Legal reform offered a convenient platform for furthering these interests.

The general tone of Brezhnev's remarks cited above suggests that the Party leader had not yet grasped the need for the kinds of sweeping legal reforms that Podgorny had advocated at the party congress. During the succeeding two months, however, Brezhnev's views on this issue shifted perceptibly. The first sign came in his speech to the May 1966 Central Committee plenum on agricultural reclamation. On this occasion, Brezhnev was much more specific than earlier in criticizing irrational agricultural practices. He was particularly emphatic about stemming the waste of valuable farmland, demanding "greater incisiveness" and more careful evaluation of all requests for the allocation of cropland for roads, factories and hydrostations. Brezhnev further remarked that,

> a proposal has been made concerning the necessity of adopting a law on land utilization. It seems to me that this proposal deserves support. Such a law must define the procedure and responsibility of all organizations for the proper use of land."

This statement marked Brezhnev's public acceptance of the need for major new land legislation. But it made no mention of the other branches of natural resource law. This omission was remedied in the Plenum's concluding resolution, which explicitly authorized the passage of new legislation "on the fundamental principles of land and water use" (osnovnye nachala zemlepol'zovaniia i vodopol'zovaniia). With this statement, the codification of water law was formally added to the list of issues awaiting Politburo attention. After seven years of germinating, the codification issue had finally reached the decision agenda.

With Politburo endorsement now secured, codification efforts moved into high gear. In December 1966, the Presidium of the USSR Supreme Soviet instructed the Commission on Legislative Proposals
to prepare a comprehensive all-union water law and similar laws on land, minerals and forests. This marked the start of the formal legislative drafting process. By mid-July 1967, work had progressed sufficiently for Izvestiia to make reference to the expected adoption of a new water law. In June 1968, E. E. Alekseevskii, USSR Minister of Land Reclamation and Water Resources, reported that the Soviet government had taken measures to accelerate the codification work. Shortly thereafter, new appointments were made to the Deputies Preparatory Committee in expectation of the unveiling of the draft law. On this occasion, RSFSR Agriculture Minister L. Ia. Florentev was appointed to head the Committee. Then, in April 1970, the draft "Fundamentals of Water Legislation" were published in the central press, prompting extensive comments from legal institutes, government officials and citizens. Finally, in December, a revised draft was adopted into law by the USSR Supreme Soviet.

THE PROTECTION OF LAKE BAIKAL

The campaign to save Lake Baikal has been widely viewed in the literature as a rare instance of successful agenda-setting by a grass-roots movement of Soviet environmental activists. Although bureaucratic officials participated in the movement, they are described as having played a supporting rather than initiating role. Given this perception, and the unique character of the lake, the Baikal case is generally regarded as "atypical" of the way most issues are created in the USSR.

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The research presented here reaches a different conclusion. While the setting and emotional level of the controversy were certainly unique, our analysis shows that the forces which propelled the issue onto the agenda were similar to those observed in our previous case studies. Once again, the key actors were representatives of scientific and bureaucratic institutions responsible for water research and development. These policy entrepreneurs were among the first to publicize the threat to the lake and were the main proponents of governmental actions to deal with the problem. Thus, rather than being an anomaly, the case of Lake Baikal further illustrates the central role of bureaucratic officials in spurring recognition of new policy issues in the Soviet Union.

The Issue Emerges

Plans to utilize Baikal as a source of industrial water supply were first announced in the Guidelines for the Sixth Five-Year Plan (1956-60) adopted by the 20th Party Congress. Pursuant to the guidelines, the USSR State Committee for the Timber, Pulp/Paper and Woodworking Industry and Forestry Management ( Gosleskhoz) and its State Institute for the Design of Cellulose and Paper Industry Enterprises in Siberia and the Far East ( Sibgiprobum) formulated plans to construct two large pulp mills in the southwestern corner of the lake. The first—the Baikalsk Cellulose Combine—was designed to produce 200,000 tons per year of ultra-pure rayon cord for automotive and aircraft tires at a site on the southern shore of the lake. The second mill, the Selenginsk Pulp and Board Combine, was to be built on the Selenga River 50 kilometers upstream of the lake. Its product was less specialized, and was to be used for making ordinary cardboard.

19 These plans were closely linked to Khrushchev's program for the industrialization of Siberia and the development of the Soviet chemical industry.
The proposed mills generated controversy from the moment of their inception. Their leading Siberian critic was the limnologist, Grigorii I. Galazii. In the late-1950s, Galazii headed a small research station devoted to the study of Baikal at the lakeside village of Listvianka. The station was subordinated to the East Siberian branch of the Academy of Sciences. Galazii first called attention to the possible damage to the lake at a biological conference in Irkutsk in mid-1957. The conference was evidently convinced by Galazii's report, for its concluding resolution described the protection of Baikal from industrial wastes as "an extremely urgent task" which needed to be addressed by the authorities. As an added testimony to Galazii's entrepreneurial skills, the conference resolved to petition the Academy Presidium to expand his research station into a full-fledged Limnological Institute, an action taken in 1962.

Galazii reiterated his concerns about the lake in August 1958 at a major conference on the economic development of Siberia organized by Gosplan, the RSFSR Council of Ministers and the Academy of Sciences. This gathering, attended by 2,500 specialists and administrators, also urged greater caution before embarking on whole-scale industrialization of the Baikal basin. At a third conference in Irkutsk in September 1959, Galazii took the added step of organizing a field trip to the lake to dramatize the potential threat of the mills to the lake's fragile ecosystem. This conference also adopted a special appeal requesting the USSR Council of Ministers to reconsider the planners' proposals to utilize the lake's resources for industrial and hydropower development.

The forewarnings of the Siberian specialists were echoed by the similar concerns among Moscow officials. At the forefront of these efforts was the prominent geographer, Inokentii Petrovich Gerasimov, Director of the Academy of Science's Institute of Geography. Together with other leading scholars, Gerasimov orchestrated a wide-ranging review of the Baikal question at the Third All-Union Congress of the USSR Geographical Society in
January-February 1960. The discussion was reflected in the Congress' closing resolution, which urged tougher safeguards against the contamination of the nation's key water bodies.

The growing concerns over Lake Baikal coincided with Zvonkov's pioneering initiatives to alert the Soviet leadership to the broader problem of water pollution. These two issues merged in May 1960 when the RSFSR Council of Ministers adopted a resolution ordering stricter safeguards against pollution of Lake Baikal by industrial and municipal enterprises. This action, taken less than a month after the April 1960 water management resolution, limited timber felling within the watershed of the lake and prohibited the start-up of the Baikalsk and Selenginsk mills before appropriate effluent treatment devices were operational.

As an expression of leadership concern, the May 1960 resolution stiffened the resolve of the lake's defenders to challenge the mills when their plans came up for interagency review prior to the start of construction. The review of the Baikalsk plant began in late-1960 when Sibgiprobum's designs were formally submitted to the Academy of Sciences, Minzdrav, Gosvodkhoz, and other agencies in Moscow and Siberia. To focus its examination, the Siberian Department of the Academy of Sciences formed an interdepartmental experts commission headed by M. M. Odintsov, a mineralogist attached to the East-Siberian branch of the Academy. In December 1961, the Odintsov commission categorically rejected the plans for the Baikalsk mill, stating that the specifications submitted by Gosleskhoz are insufficiently substantiated on key points, ... do not comply with the government's resolution on the protection and utilization of the natural resources of the Baikal basin, and fail to provide for the complete treatment of the effluents generated by the plants.

These concerns were underscored in a letter published by commission-member Galazii in Komsomolskaja pravda three days after the Odintsov commission issued its report. In the letter, Galazii warned that disposal of industrial wastes could upset the lake's
marine life and endanger the only source of water supply for nearby Irkutsk.

The plans met with similar rejections from other reviewing bodies. The Academy's Institute of the Earth's Core urged denial due to the risk of earthquake activity at the site. The State Committee for Coordination of Scientific-Technical Work—the forerunner to the present State Committee for Science and Technology—argued that the plant would result in excessive pollution of the lake even with the most exacting waste treatment possible. Opposition culminated in April 1962, when the Presidium of the Academy of Sciences sent an urgent appeal to the USSR Council of Ministers requesting that the plans be shelved. This appeal, signed by Academy President Kel'dysh, recommended that further development of the entire Baikal basin be halted until a general plan (general'naja skhema) was adopted governing all the region's natural resources. The need for such a plan appears to have been initiated by Gerasimov, who had urged a similar integrated approach to natural resource development at the 1960 geographic congress. Gerasimov's sponsorship was further indicated by his publication four years later of a plan identical to that proposed in the Academy's letter.

In seeking to halt the Baikalsk project, the Academy Presidium was in effect calling on the leadership to convert its decisions of April and May 1960 into concrete actions to protect Lake Baikal. The leadership's unwillingness to take such steps, however, was demonstrated the following day when Gosleskhoz received authorization to proceed with its plans to build the Baikalsk pulp plant. The mill's opponents thereupon apparently again pressed their case before the leadership. According to later reports, this persistent opposition precipitated the wrath of Party leader Khrushchev, who banned further discussion of the Baikal matter by the national press for the duration of his term of office. Thus, while several of the protestors continued to oppose the plans in various fora, further progress of the Baikal issue toward the national policy agenda was halted.
Conflict Intensifies: 1964-65

As with the reform of water legislation, the accession of the Brezhnev-Kosygin leadership in October 1964 led to renewed controversy over Baikal. Unlike the internal bureaucratic maneuvering of 1961-62, this stage of the conflict was prominently reported by such leading national media as Pravda, Izvestiia, Literaturnaiagazeta—the organ of the USSR Writers' Union, and Komsomol'skaia pravda—the Communist youth newspaper. However, while these publications helped arouse public concern over the lake, the driving force behind the issue once again came from professional scientists and administrators directly involved with natural resource policy making.

The opening salvo was fired in February 1965, when Literaturnaiagazeta carried an article by the writer Oleg Volkov, decrying the impending destruction of the lake by the Baikalsk pulp mill, then nearing completion. In support of his call for stronger pollution controls, Volkov cited research by a variety of agencies—including Galazii's Limnological Institute—which pointed to the long-term dangers posed by the mill's effluents. Shortly thereafter, Pravda ran an article recommending that the mills either be relocated to another area or that their effluents be transported outside the Baikal basin via a specially constructed pipeline. These proposals were originated by Odintsov and other leading Academy scientists, who had written to the newspaper recommending that Baikal's massive reserves of pure water be protected from industrial development so as to preserve their usefulness for high-priority scientific research projects.

The controversy over the lake intensified in succeeding months with the publication of a heated exchange between Gosleskhoz officials—including agency Chairman Orlov—and the mills' opponents. In defense of the projects, Orlov and his associates pointed to the "enormous" economic and national security benefits
which the pulp mills would provide. They further stressed that Gosleskhoz had no intention of starting production before all necessary treatment installations were ready. From their perspective, therefore, the fears over the lake "lack[ed] any basis whatsoever." This prompted an angry response from Academician A. Trofimuk, Vice-president of the Siberian branch of the Academy. In addition to rebutting each of the points raised by Gosleskhoz, Trofimuk accused Orlov of adamantly clinging to his position simply to prove to the leaders that he was right. Such arbitrary behavior, Trofimuk argued, illustrated Gosleskhoz's "complete disregard" not only for Baikal, "but for the fate of the very branch of industry entrusted to it."

While the press debate unfolded, inter-agency opposition to the plants intensified. In January 1965, an official conference sponsored by the RSFSR Gosvodkhoz adopted a resolution stressing the necessity "of reliably guarding Lake Baikal from the discharge of industrial wastes." The following month, the Siberian Division of the Academy adopted a decision urging a complete ban on the discharge of effluents into the lake. Shortly thereafter, Iurii Danilov, USSR Chief Sanitary Inspector and Deputy Minister of the Ministry of Health, aligned his agency with the critics of Gosleskhoz in a broad-ranging environmental critique published in Pravda. This was followed by an article in the Party's

20I. Chistakov and E. Kuznetsov, "Snova o Baikale: Neobkhod-imye uтоcheniiia" [Once again about Baikal: Necessary corrections], Literaturnaia gazeta, April 10, 1965, p. 2. Chistakov was vice-Chairman of Gosleskhoz, while Kuznetsov headed its administration for pulp and paper production. Orlov's views were contained in a letter to the editor which prefaces the article. The authors pointed to the national security justification for the Baikal pulp mills by noting that the United States had the capacity to produce nearly one-half million tons per year of high-strength cord.

21Iu. Danilov, "Let us protect the water, air and soil from pollution," Pravda, June 21, 1965, p. 2; trans. in CDSP, Vol. XVII, no. 24, pp. 13-14. Without calling for the plant's removal, Danilov stated that the authorities had an obligation to ensure that it "does not pollute the lake in any way."
ideological journal by P. S. Neporozhnyi, USSR Minister of Power and Electrification, which characterized the potential pollution of the lake as "a very real danger" to the water resources of the East Siberian region. These protests coincided with the beginning of the interagency review of the Selenginsk pulp and cardboard plant. This review resulted in another series of disapprovals by such agencies as RSFSR Gosvodkhoz, the Siberian Division of the Academy of Science and Gosplan's prestigious Council for the Study of the Productive Forces of the USSR (SOPS).

The scope of the debate expanded further in late-1965, when Gerasimov and Trofimuk published a comprehensive "general scheme" for the multipurpose use of the entire Baikal watershed. The plan was the outgrowth of a coordinated research project by Gerasimov's Institute of Geography, SOPS, Galazii's Limnological Institute, and the Leningrad City Planning Institute. Its underlying concept was that the Baikal region represented "an enormous natural combine" whose "product"--extraordinarily pure water--was becoming increasingly vital to the Soviet economy. For this reason, development of the lake by single-purpose projects such as the proposed pulp mills was "absolutely impermissible" from a scientific and practical point of view. In place of such measures, Gerasimov and Trofimuk proposed that a Baikal National Park-Combine (natsional'nyi park-kombinat) be established to manage the basin's resources and exert strict control over all economic and industrial enterprises located there.

Thus, by late 1965 the controversy over the pulp mills had spilled over into a heated bureaucratic conflict over the manage-

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22 In addition to regulating the vast hydropower resources of the Angara River, the lake was seen as a potential water source for the electronics industry, an important transport artery, fishing resource, and a potentially profitable tourist attraction.

23 Other elements included construction of a pipeline from the Baikalsk plant to the river Irkut; relocation of the Selenginsk plant and utilization of its structures for non-polluting enterprises; and the transfer of all log transportation to surface roads.
ment of the Baikal region. Several elements of this conflict were certain to attract the attention of senior Party and Government officials. The first was the public denigration of Minleskhoz (the successor to Gosleskhoz) and its top officials by Trofimuk and other critics. Such criticism skirted the bounds of acceptable public discourse and implicitly challenged Party directives on the Siberian pulp and paper industry. The debate also threatened to hold up two important facilities in which substantial resources had been invested and a significant part of whose output was intended for the defense industry. Equally important, the conflict featured the involvement of a broad range of research and planning agencies whose top officials enjoyed close contacts with senior policy makers. Included were the Academy of Sciences, Gosplan and the State Committee of Science and Technology (GKNT).

Indirect evidence that the Baikal issue was under review by senior officials was provided in November 1965, when the RSFSR Supreme Soviet Presidium adopted a resolution calling for better implementation of the republic's 1960 conservation law. While it did not specifically mention Baikal, the resolution contained explicit strictures against the very kinds of industrial practices that were of such concern to the defenders of the lake—i.e., overcutting of watersheds, uncontrolled log rafting, tardy completion and improper operation of effluent purification facilities and a generally lax attitude toward safeguarding irreplaceable natural resources.

Conclusive evidence that the Baikal matter had reached the top policy bodies came in mid-March 1965, when the USSR Government

24 The military dimensions of the Baikal cellulose plants are noted in Gustafson, "Environmental Issues Rise to Legitimacy," p. 40; and Komarov, The Destruction of Nature in the Soviet Union, p. 7.

25 The GKNT was established in September 1965 out of the former State Committee for the Coordination of Scientific-Technical Work.
instructed Gosplan to establish a blue ribbon commission to examine the threat posed by the Baikalsk and Selenginsk mills. The Commission was directed by Academician N. M. Zhavoronkov, a specialist on light isotopic elements within the Academy's Institute of Chemistry. The commission's membership consisted of dozens of engineers, scholars and water resource experts from the Academy of Sciences and other leading Moscow and Siberian research agencies.26

Following a lengthy review of the mills' designs and several visits to the Lake, the Commission presented its report to a joint session of the collegia of Gosplan, GKNT and the Academy Presidium in June 1966. The principal finding was that the plants did not pose a fundamental threat to the lake—provided their effluent treatment facilities were built and operated in strict accordance with design specifications. As an added safeguard, however, the Commission recommended long-term monitoring of the mills' wastes as well as completion of plans for a pipeline to remove the wastes out of the Baikal basin. Then, if the plant's purification technology failed to perform adequately, the pipeline could be constructed with minimum delay.

26 Two additional influences cited by most analysts are Mikhail Sholokhov's impassioned plea to save "this holy sea, our sacred Baikal" at the 23rd Congress (March 29-April 8, 1966), and the outspoken open letter, signed by 35 academicians, authors and creative artists, published in Komsomol'skaja pravda, May 11, 1966. See Kelley, "Environmental Policy-Making in the USSR," p. 581. If Volkov's account is correct, however, Sholokhov's remarks could not possibly have influenced the decision to create the special commission. The same goes for the open letter, unless one assumes that this document had been sent to the leadership over two months prior to publication. This seems unlikely in view of the public nature of the appeal and the openness of the press to similar "save Baikal" articles at the time. In my judgement, both events are best seen as efforts to pressure the new commission to conduct a thorough investigation. This is further suggested by Zhavoronkov's remark to Gustafson's concerning the intense public pressure brought to bear on the Commission at that time. See, Gustafson, "Environmental Issues Rise to Legitimacy," Reform in Soviet Politics, p. 42.
While clearly not the whitewash numerous observers had feared, the Commission's verdict provided a clear endorsement of the technological safeguards which Minleskhoz had devised to prevent pollution of the lake.\(^{27}\) This provoked a storm of opposition from the mills' critics, who argued that there was no guarantee that the treatment works would be ready on time, or that they would operate properly. Eventually, the critics argued, plant operators would be forced to choose between safeguarding the lake or keeping production lines open. In such cases, they would inevitably choose the plan over the lake, and Baikal's unique water quality would be destroyed. These protests failed to sway the Committee's governing bodies, which adopted its report without change. With their designs vindicated, Minleskhoz pressed forward with the Baikalsk plant, which began production in late 1966.\(^{28}\) This ended the second phase of the debate, whereupon the issue of Baikal again receded from the agenda.

**Baikal Redivivus: 1967-69**

The third—and decisive—stage of the controversy began in the Spring of 1967 and culminated in early 1969 with the adoption of a second major resolution on the protection of Baikal by the USSR Council of Ministers. This action—which was followed by a further joint Party-State resolution on Baikal in 1971—has been

\(^{27}\)Komarov, *The Destruction of Nature*, pp. 8-10. According to Komarov, the Commission's report underwent four successive drafts before the authors dropped their initial conclusion that construction of the Baikalsk mill would be "ruinous" for the lake. However, Komarov provides no sources for his account. His analysis is also inconsistent with other published works on numerous key points. For these reasons, the book was not relied upon in this analysis.

\(^{28}\)The first phase of the mill was presented to the State Acceptance Commission for permission to start up in December 1966. According to later press reports, M. Gofman, Chief Sanitary Physician of the RSFSR Ministry of Reclamation and Water Management, refused to sign off on the plant, whose treatment devices were still not complete. At this point, Minleskhoz chief Timofeev substituted his signature for Gofman's thereby resolving the remaining obstacle to the plant's commissioning.
described by Soviet and Western observers as the turning point in the effort to protect the lake's water resources. The 1969 enactment can therefore be taken as evidence of the final entry of the Baikal issue onto the decision agenda.

As before, the central agenda participants were the Academy of Sciences, the Limnological Institute and the increasingly influential State Committee for Science and Technology. The Academy's concerns were expressed in a renewed assault on all forms of environmental degradation at its May 1967 General Meeting. The gathering witnessed a striking admission by President Kel'dysh that the Academy had "slackened its attention" to nature protection since its 1961 reorganization and consequently had failed to take a sufficiently active stance against the rising tide of environmental abuses. Such problems, Kel'dysh argued, had reached a point where the Academy was compelled to intensify its involvement in natural resource policy making. Similar comments were voiced by other speakers.

The most pointed remarks, however, were made by Academician Trofimuk, who challenged the Academy "to stop making declarations and finally do something concrete about the [USSR's] water problem." Trofimuk thereupon launched a vigorous attack on Zhavoronkov's Baikal Commission, which he accused of "rashly" (oprometchivo) advising the government that Baikal was in no way endangered by Minleskhoz's pulp plants. In so doing, Trofimuk argued, the Academy had "in essence sanctioned activities connected with the pollution of this enormous water body."

The Academy discussion resulted in the creation of several new research bodies for studying environmental problems and developing options for resolving them. The most important from the standpoint of Baikal was the Commission for the Study of

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29The eminent economist, N. P. Fedorenko pressed for greater price incentives for rational resource management. Hydrometeorological Chief E. K. Fedorov urged closer monitoring of environmental quality. Gerasimov, meanwhile, recommended that "many more" general meetings be convened to deal with other natural resource issues.
Productive Forces and Natural Resources. This body, which reported directly to the Academy Presidium, was placed under the direction of Vice President N. V. Mel'nikov. Its members consisted of numerous individuals—including Gerasimov, Trofimuk, and SOPS member Nikolai V. Razin—who had previously spoken out against the Baikal pulp mills. In succeeding months, these individuals sought to use the Mel'nikov commission as a sounding board for reviving debate over the lake within the Academy. This became apparent at the Committee's first plenum, when Gerasimov's urged the group to focus its attention on "helping to implement" important environmental proposals that had been formulated by Academy research and policy councils. This remark almost certainly referred to Gerasimov's own plan for the comprehensive development of the Baikal basin which had been the product of just such a research council.

Galazii and his colleagues at the Limnological Institute were a second force pressing for a change in the government's Baikal policy. In the fall of 1968, for example, Galazii wrote in Komsomol'skaia pravda that he "was preparing materials for the Academy of Sciences" on the long-term impact of industrial development on Siberia's water resources. The research indicated that the region was likely to experience a pronounced "water hunger" in coming decades due to the accelerating development of Siberia's minerals, forests and other resources. In Galazii's view, this made it especially imperative to preserve the high purity of Lake Baikal—the principal water source for much of Eastern Siberia. His article pointed out, however, that despite the expensive purification facilities installed at the Baikalsk plant, the lake's water quality had already begun to decline.30

30Galazii cited estimates by the Hydrometeorological Service that even with the plant operating at half capacity, up to 400 tons of toxic substances were being discharged into the lake each day. Sulfur compounds had also been noted at depths of up to 700 meters as far as 20 kilometers from the plant. This was accompanied by silt build-up and rising salt levels in the Baikal's major tributaries—a result of excessive logging. Ibid.
To stem further damage, Galazii recommended a total ban on the discharge of any industrial or domestic effluents into the lake and immediate completion of plans for the Baikalsk-Irkut pipeline. Echoing Gerasimov's proposal, he also urged creation of a protective zone around the entire lake, including strict limits on industrial, forestry and log-rafting activities.31

The third major proponent of more careful protection of the lake was the State Committee for Science and Technology. The GKNT had become increasingly involved in environmental matters since its reorganization in September 1965.32 This appears to have been a reflection of the environmental views of its Chairman, CPSU Central Committee member Vladimir Alekseevich Kirillin (1913- ).33 The main vehicle for the GKNT's participation in environmental policy discussions was its Academic Council on the Study of the Complex Use and Renewal of Natural Resources. This body, headed by Gerasimov, had been established in July 1966 as a cooperative venture with the Academy of Sciences. The council's

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31 These recommendations were further elaborated in late 1968, when Galazii published a full-length report on the findings of a major research program carried out by the Limnological Institute, the Baikal basin inspection of the RSFSR Minvodkhoz and the Irkutsk Medical Institute. See G. I. Galazii, ed., Baikal i problema chistoi vody v Sibiri (Baikal and the problems of clean water in Siberia) (Irkutsk: Limnologicheskii Institut Sibirskoe Otdelenie ANSSSR, 1968).

32 The GKNT's predecessor—the State Committee for Coordination of Scientific-Technical Work—had been active in environmental debates since the early 1960s, when it had organized a series of research councils on natural resource issues. These efforts were expanded under Kirillin. In 1965, an Academic Council on Air Pollution was created under the direction of N. M. Zhavoronkov. In 1968, a Council on Water Resources and the Water Balance was established. Shortly thereafter, a Council on the Study of the Utilization of Oceanic Resources was created under the leadership of Gidrometsluzhba Chairman, Fedorov. See "Khronika" [Chronicle], Gidrotekhnika i melioratsiya, no. 8 (1965), pp. 114-15.

33 Kirillin had been exposed to research and policy debates on natural resources in his previous position as Head of the Central Committee's Department for Science and Educational Institutions in 1955-63.
mission was to coordinate scientific research on major problems of natural resource use and protection. This included forecasting the environmental impact of large-scale resource development projects—a task which placed the council at the center of the debate over the Baikalsk and Selenginsk plants. The council's institutional leadership in the environmental arena was further cemented in early-1966, when it adopted a five-year plan for coordinating all GKNT and Academy research on natural resource issues.34

This initiative reached fruition in January 1969, when the USSR Council of Ministers adopted a special 10-point resolution containing important new provisions against pollution of Lake Baikal. As noted above, the resolution marked a major change in the leadership's attitudes toward Baikal and the beginning of serious efforts to protect the lake's water quality from further deterioration.

The 1972 Environmental Resolutions

The need for further statutes governing all aspects of environmental quality arose in the mid 1960s. This was partly an outgrowth of the Baikal controversy, which appears to have fostered a consensus among environmental experts on the need to address pollution problems on a nationwide scale. This perception was clearly reflected in the writings of the ecologist-author Volkov, who urged that the experience gained at the lake be applied to "the entire problem of protecting fresh water from pollution." At Baikal, Volkov stated,

knowledge is growing and methods are being developed that make it possible to create here an independent school for purification of pulp enterprise wastes. It could become the world's leading such school and train specialists capable of

34Iu. P. Belichenko, "V. I. Lenin i okhrana vodnykh resursov" [V. I. Lenin and the protection of water resources], Gidrotekhnika i melioratsiya, no. 3 (1970), pp. 12-13. According to Belichenko, the GKNT program envisioned the development of detailed plans for pollution abatement measures at many of the USSR's key water resources. The research was to be carried out by 177 institutes and laboratories belonging to 37 ministries and departments.
putting an end on all Soviet soil to the pollution of rivers and reservoirs by industrial wastes.

A second catalyst was the occurrence of a severe pollution emergency on the middle Volga in May 1967. The crisis was triggered by a massive discharge of wastes by an oil refinery whose treatment facilities had become inoperative. The effluents caused the destruction of thousands of tons of fish along the Kama river, a major Volga tributary, and may have disrupted the water supply of the capital of Perm' oblast as well. The incident had major repercussions both locally and in Moscow, and led to the dismissal of the refinery director and the chief of the local Minvodkhoz basin inspection. These extraordinary sanctions, coupled with the unusually shrill tone of press reporting, provide a clear indication of the level of official concern aroused by the matter.

In response to such developments, government officials became increasingly outspoken in defense of environmental quality. One example was the Procuracy, which promptly opened criminal investigations against the parties responsible for the Volga crisis.35 Another new entrant to the debate was Gosplan director Nikolai Baibakov. Having been silent on the topic since assuming this post in 1965, Baibakov forcefully addressed the pollution problem before the USSR Supreme Soviet in October 1967. In locating new industrial enterprises, Baibakov stated,

it is necessary to pay increasing attention to questions of nature conservation and the rational use of each plot of land. We cannot reconcile ourselves to such practices as setting aside of unjustifiably large sections of land for

35"Called to account for polluting water," p. 3. This marked a further intensification of the Procuracy's crack-down against polluters. In December 1965, the Procuracy instituted criminal proceedings against the director of the Kirov Chemical Plant for negligence in causing a mass fish kill on the Volga. See Pravda, December 17, 1965, p. 6. For reports of similar actions, see Izvestiia, February 4, 1966, p. 4; and August 20, 1966; and Pravda, June 30, 1966, p. 4. Such cases reflected a marked shift from the Khrushchev years, when criminal penalties were almost never applied against persons guilt of environmental abuses.
construction, the excessive felling of forests, and the pollution of water and air resources.

Baibakov's environmental awareness was likely stimulated by the completion of the Genskhema for the USSR's water resources that had been ordered by the Council of Ministers in April 1960. This document, finally unveiled in early 1967, concluded that shortages of clean water were "beginning to restrain the normal development of the [USSR's] productive forces." Given the scarcity of clean water, the report stressed, the requirements of agriculture, industry and the local population can be satisfied only on the condition of a sharp reduction in the pollution of water resources by effluents and the strictest implementation of the decrees of the all-union and republic governments on the protection of water resources. Without a decisive struggle with pollution, capital investments in water management facilities (vodokhoziaistvennoe stroitel'stvo) will not yield the required results.

The period also witnessed innovative environmental reforms at the republic level, particularly in the Ukraine. In March 1967, the Ukrainian government established a special State Committee for the Protection of Nature. The new agency was authorized to coordinate local environmental control activities and advise Ukrainian party and government officials on additional conservation measures. As an expression of the seriousness of republic perceptions of the problem, the Committee's budget included funds for over two dozen branches to supervise emissions at the local level. These efforts evidently enjoyed the support of republic Party Chairman and Politburo member, Petr Shelest, who urged a crackdown on industrial managers who contaminate water supplies "and through their wastefulness create difficulties in satisfying the public's [water] needs."36

The rising concern for the environment prompted a group of prominent legal scholars to mount a renewed drive for the national

36"Urgent tasks of Communists in Kiev Province - Speech by Comrade P. E. Shelest," Pravda Ukrainy, February 17, 1968, pp. 1-2; trans. in CDSP, XX, No. 8, pp. 6-8. Shelest also urged "intensification of the struggle" against air pollution by industrial enterprises.
conservation law and all-union environmental protection agency that had eluded them under Khrushchev's administration. Like their previous initiative—and Kolbasov's more recent campaign for codifying USSR water legislation—the first stage of this initiative was conducted in the specialized press. Among the first to propose such measures was the eminent Moscow University jurist, N. D. Kazantsev, who in June 1967 reiterated his earlier proposal for the passage of fundamentals of environmental law for the USSR and companion codes for the union republics.\(^{37}\) This was followed by an article by Kolbasov in the Academy's law journal. Kolbasov's proposal was clearly patterned after his earlier arguments for codifying water law. Just as the water law reform had been necessitated by gaps in all-union legislation, Kolbasov wrote,

one cannot regard as normal a situation in which one of the most important economic and cultural problems—that of protecting the environment—is resolved primarily in the legislation of the union republics and does not find sufficiently broad reflection in federal legislation."

To remedy this deficiency, Kolbasov proposed the adoption of an all-union conservation law containing detailed provisions for the protection of natural resources and strict requirements for their enforcement.\(^{38}\) The law's implementation was to be carried out by a new conservation agency uniting the control functions of the various natural resource ministries. These proposals were further discussed at a major conservation conference in Moscow in November

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\(^{37}\) N. D. Kazantsev, "Prirodno-resursnoe pravo i ego predely kak integrirovanoi otriasli prava" [Natural resource law and its boundaries as an integrated branch of law], Vestnik Moskovskogo Universiteta, no. 6 (1967). This contained many ideas expressed in Kazantsev's seminal article, "O pravovom regulirovanii okhrany prirody" [On legal regulation of environmental protection] Vestnik Moskovskogo universiteta, no. 1 (1960), pp. 5-17.

\(^{38}\) Kolbasov also urged that the law provide streamlined procedures for reimbursing downstream water users, collective farms and forestry cooperatives for monetary losses incurred as a result of the violation of environmental statutes by neighboring factories, dambuilders and other entities.
1967, which characterized the creation of such an agency as an urgent task.

In the latter part of 1967, the repeated calls for environmental reform appear to have triggered an intense debate on the matter with the Soviet leadership. One indication of the debate was provided by a provocative article in Literaturnaia gazeta by the popular writer, Vladimir Chivilikhin. The article vigorously rebutted a series of arguments against tougher pollution controls that had recently been voiced. These arguments included assertions that: (1) environmental pollution is not a big problem—in the words of a author from Magnitogorsk, "We live there, we manage, we breathe. Why should you worry about us?"; (2) controlling pollution is excessively costly; (3) the USSR has enough laws on the books to deal with the problem; (4) preserving pristine air and water is utopian, since "in our age of constantly accelerating and unremitting development of industry it is impossible" to completely prevent pollution; and (5) the most appropriate response is thus a short-term campaign to curb the worst abuses. Chivilikhin's response suggests that his primary audience was not the writers' union, but high officials opposed to the enactment of new anti-pollution statutes. The struggle for clean air, he argued,

is not a short-term campaign; we won't get anywhere through edicts and orders... In real life, there is only one way to solve the problem under discussion—painsstaking, sometimes agonizingly hard work. ... So far this work has been done without a plan, without coordination, and with countless flaws and errors. I am convinced that an interdepartmental... agency with great powers must take charge of it.

The existence of behind-the-scenes controversy was further suggested by a senior official of the USSR Procuracy.

One often hears that the 20th century is the century of motion and of the rapid development of technology and industrial production. One cannot stop the growth of technology and therefore, the argument goes, it is impossible to eliminate air pollution. You can't make an omelet without breaking eggs.

A common refrain of the Stalinist era, the above proverb cap-
sulized the views of conservative officials on the inevitability of environmental damage in an industrializing USSR.

Elite resistance to environmental measures, however, appeared to diminish significantly following Brezhnev's strong appeal for conservation in his speech on the 50th Anniversary of the Russian Revolution in November 1967. Like Chivilikhin's unnamed opponents, Brezhnev placed the issue squarely within the context of technological development. But rather than accepting the inevitability of environmental decay, Brezhnev called for a redoubling of efforts aimed at preserving the USSR's natural environment.

In all this, I wish to point out so as to underscore how important it is to preserve nature and to protect and multiply its riches. (Applause.) A prudent, zealous use of natural resources, concern for the land, forests, rivers and clean water, and for plants and animals—all this is our sacred communist task (nashe krovnoe kommunisticheskoe delo). We must preserve and beautify our land for future generations of Soviet people. (Stormy applause.) ... The more rationally we use the riches of nature, the greater the successes that will be achieved by industry, agriculture and science.

This was the first personal appeal for conservation by a Party leader since Lenin's famous dicta 60 years earlier. Judging from the audience's enthusiastic response, there were evidently many party officials who felt that such a commitment was long overdue. The timing of Brezhnev's intervention, however, suggests that he was responding to, rather than initiating a new policy issue. The long interval before Brezhnev next raised the subject at the 24th Party Congress in 1971 further indicates that environmental protection did not rank among his most urgent policy goals. Rather, like his earlier statements on the use of land resources, Brezhnev's appeal appears to have been motivated by a desire to advance related policy initiatives (e.g., agricultural reform and scientific development) and underscore certain broad themes which
were emblematic of his leadership. Brezhnev's omission of any reference to past and present environmental controversies—especially the issue of Baikal—and his emphasis on the positive gains from conservation further suggest that he may also have been trying to temper the emotional level of the debate and prevent it from spilling over into a generalized attack on official economic policy.

Whatever his intentions, Brezhnev's remarks apparently tipped the scales in favor of those arguing for stronger environmental controls. Sensing that a policy window had been opened, environmental proponents undertook a further series of initiatives designed to capitalize on the leadership's renewed receptivity. In early 1968, the Party's leading ideological journal opened its pages to a broad-ranging debate under the rubric, "Our sacred task"—a direct quote from Brezhnev's speech. The first articles dealt with the pros and cons of an all-union conservation agency, suggesting that the formation of such an agency may have been under serious consideration at this time. The discussion continued into the early part of 1969. It then concluded in a bold proposal by I. P. Gerasimov for thorough environmental impact analysis prior to undertaking any major natural resource project. It is high time, Gerasimov argued, to replace

the outmoded and dangerous tradition of viewing nature as inexhaustible [with] a new concept, which recognizes that scientific knowledge is inadequate for perfect management of nature. ... The necessary basis for [such] rational management must be accurate scientific forecasting of those transformations in the natural environment which result from human influence on nature.

39 Included were the need for thrift and economy (berezhlivost'), accountability (otvetstvennost'), the importance of basing policies on scientific laws (ob'ektivnost'), and the improvement of productivity through better management of resources (intensivnost').

40 N. Eliseev and A. Kondratenko, "Nashe krovnoe delo" [Our sacred duty], Kommunist, no. 5 (1968), pp. 112-17. The writers were officials of the Chief Administration for the Hunting Industry, Nature Preserves and the Protection of Nature of the RSFSR Ministry of Agriculture.
To facilitate the required analyses, Gerasimov recommended that a comprehensive inventory of environmental protection measures be compiled as a separate section of the state research plan and funded with the necessary budgetary and personnel resources.

This was followed by a vigorous grass-roots campaign to clean up the Volga basin. The campaign was sparked by a local Communist youth organization whose activities were highlighted in the national press. This was followed by a series of strongly-worded articles by local officials decrying the failure of factories and municipalities to treat their effluents. Before long, the campaign ignited passions almost as intense as those over Lake Baikal. The scientific community joined the campaign in early September when the Academy's Council on Multipurpose Use and Protection of Water Resources held a major conference on the Volga in Togliatti. Shortly thereafter, the USSR Council of Ministers ordered the governments of the RSFSR and Kazakhstan to formulate detailed proposals for limiting the discharge of untreated effluent into the Volga and Ural rivers.

Then, in late 1968, senior officials of the RSFSR government joined the environmental movement by putting forth a proposal of their own. In remarks before the USSR Supreme Soviet, Konstantin G. Pysin, First Deputy Chairman of the RSFSR Council of Ministers, put forward a proposal that local health officials and Minvodkhoz basin inspectors of negligence in carrying out their pollution control responsibilities. See, "The Volga will be clean: Act together," Izvestiia, June 15, 1968, p. 1. This led to disciplinary actions by the Party Control Committee and the initiation of criminal proceedings by the USSR Procuracy against the officials of a metallurgical combine. "After criticism: Alarm about the river," Pravda, June 20, 1968, p. 3; trans. in CDSP, XX, No. 25, pp. 20-1. "Polluters of the Volga are punished," Izvestiia, September 3, 1968, p. 4; trans. in CDSP, XX, No. 36, pp. 26-27.

These instructions were contained in a September 1968 resolution by the USSR Council of Ministers on the protection of the Caspian Sea, "O merakh po predotvrashcheniiu zagriazneniiia kaspiskogo moria" [On preventing the pollution of the Caspian Sea], Resheniia, vol. 7, pp. 105-111.
urged that detailed anti-pollution directives be elaborated in a separate section of the yearly economic plan for each republic ministry, department and region. In Pysin's view, such an approach was essential to raise the "alarming[ly]" low level of compliance with the environmental provisions contained in existing plans. Significantly, these remarks met with approval from Baibakov, who noted that Pysin and other speakers had "justifiably criticized" the inadequacies in the country's environmental efforts. Pysin's recommendation was implemented in the Spring of 1968 when the RSFSR government ordered the development of yearly and long-range environmental plans by all republic agencies as part of preparations for the 1971-75 Five-Year Plan. The proposal was then given nationwide prominence at the 24th Party Congress by K. M. Gerasimov, First Vice Chairman of the RSFSR Council of Ministers and head of the republic Gosplan. On this occasion, Gerasimov recommended that a separate section on nature protection be included in the economic plans for all administrative and territorial entities in the USSR.

Simultaneously, the RSFSR became the first republic to establish a standing committee on nature protection within its Supreme Soviet. This action was apparently taken in late 1968, at which time the committee held its first review of regional environmental problems. The review highlighted widespread deficiencies in the treatment of industrial wastes, thereby strengthening the resolve of republic officials to push ahead with further environmental reforms.

43"Rekam byt' chistymi" [Rivers will be clean], Izvestiia, November 14, 1968, p. 1. The editorial reported that the question of "a careful, solicitous approach to natural resources" had recently been discussed at a session of the Commission on the Protection of Nature of the RSFSR Supreme Soviet. This was the first reference to such a commission by the national media.

44T. S. Sushkov, "Pravovaia okhrana prirody" [Conservation law], Sovetskoe gosudarstvo i pravo, no. 5 (1969), p. 3. Apparently drawing on information from this review, Sushkov noted that the Ministry of Petroleum Refining and the Petrochemical
As regional and local initiatives proliferated, Kolbasov and other Academy scholars intensified their lobbying for a national environmental law. A key stage in this effort was an all-union conference organized in June 1969 by the Institute of State and Law. In attendance were many of the Academy's top environmental experts, including SOPS Chairman Mel'nikov, GKNT environmental council head I. P. Gerasimov, and IGPAN experts Aksenonok and Kolbasov. Reports presented to the conference were notably more critical than at previous gatherings. Gerasimov, for example, stated that environmental damage had reached "catastrophic dimensions" across large portions of the USSR. "This cannot but evoke alarm (trevoga) for the fate of the natural environment." Conference participants responded by advancing a series of proposals, including the strengthening of criminal and civil penalties for pollution violations, review of foreign legislation to identify concepts than might be applicable to the USSR and adoption of a Constitutional clause on the environment. The conference further urged the "codification of legislation and the creation of a unified state agency for the protection of the environment."

Having reached consensus on basic principles, legal scholars spent the next 18 months debating the contents of the proposed law.45 A third conference was organized in January 1971 to

Industry had completed only two of ten treatment works planned for 1967. Factories in Mezhegorsk performed equally poorly, using less than forty percent of allocated anti-pollution investments in 1968.

45Major contributions to the debate included: L. A. Zaslavskaya, "Issledovanie v oblasti zakonodatel'stva ob okhrane prirody" [Research on environmental law], Sovetskoe gosudarstvo i pravo, no. 6 (1971); and N. D. Kazantsev, "O nekotorykh voprosakh kodifikatsii prirodoohranitel'nogo zakonodatel'stva" [Questions on the codification of environmental legislation], Vestnik Moskovskogo Universiteta: Serija prava, no. 6 (1971). See also, Zaslavskaya, "O sozdaniia spetsialnogo gosudarstvennogo organa po okhrane prirody" [On the creation of a special state agency for the protection of nature], Uchenye zapiski VNIISZ, no. 23 (1971), pp. 187-95. VNIISZ is the Russian acronym for the All-Union
identify further areas of agreement. Finally, in early 1972, Kolbasov published a comprehensive article summarizing the legal community's recommendations for the policy makers.

Thus by early 1972, the environmental community had articulated a series of proposals for protecting the USSR's water and other natural resources. While not presented in a comprehensive document such as Zvonkov's 1960 report, these ideas nonetheless provided a relatively coherent response to many of the USSR's most pressing environmental difficulties. The centerpiece of the program--promoted most vigorously by Kolbasov--was the strengthening of environmental law. The second element was the consolidation of environmental monitoring functions in the hands of a well-funded federal agency. This was another reform advanced by legal and scientific officials. The adoption of detailed environmental directives for industrial ministries and government agencies, and the consolidation of these in a discrete section of each department's yearly economic plan, was a third proposal intended to improve environmental performance. As noted above, this idea had originated within the RSFSR government. A final recommendation, put forth by I. P. Gerasimov, urged greater scientific research and more comprehensive long-term forecasting of environmental conditions.

Beginning in early 1971, there were mounting indications that the leadership was becoming increasingly concerned about environmental damage. At the 24th Congress, Brezhnev again called for greater care in utilizing natural resources.

Taking measures to accelerate scientific-technical progress, we must do everything so that it is combined with a prudent attitude toward natural resources and does not serve as a source of dangerous air and water pollution and the exhaustion of the land. The Party is becoming more demanding of planning, economic and design organizations and all cadres involved in designing and building new enterprises and

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improving existing enterprises as regards the protection of nature.\footnote{XXIV S"ezd (Stenograficheskii otchet), vol. 1, p. 82, emphasis added. Brezhnev further noted that, as part of his Peace Program, the USSR was ready to participate in collective international measures for the protection of nature. This proposal was reiterated in the foreign policy portion of the report. Ibid., p. 54.}

Kosygin's economic report to the Congress contained a similar exhortation for more rational natural resource management, marking his first public statement on the subject. Further evidence of leadership attention was provided in May 1971 and again the following July, when the Conservation Committees of both chambers of the USSR Supreme Soviet held special sessions to review the environmental performance of various national ministries.\footnote{The standing conservation committees were formed in June 1970. See A. Agranovskii, Izvestiia, July 30, 1970, pp. 1, 3; trans. in CDSP, XVII, no. 30, p. 19. The May 1971 session reviewed the activities of the chemical, pulp and paper and non-ferrous metallurgy industries. See, Vedomosti Verkhovnogo Soveta SSSR, 1971, no. 20, pp. 274-5; and Sovety deputatov trudiashchikhia, no. 7 (1971), p. 58. The July 1972 review focused on the use of minerals by the ministries of ferrous and non-ferrous metallurgy. Ibid., 1972, no. 28, p. 419.} Both reviews concluded with resolutions recommending improvements in environmental planning, additional treatment works, and stepped-up research on waste purification technologies.

While confirming the issue's rising prominence, the above developments provide no indication that environmental problems had been elevated to the national decision agenda. During the following 18 months, in fact, no such indication appeared in any of the publications used as a guide to the leadership's agenda. This silence ended when the Supreme Soviet devoted a major segment of its September 1972 session to a review of ecological problems. The session concluded with the adoption of a sweeping resolution ordering intensified measures to safeguard the environment. This was followed by the passage of an all-encompassing environmental resolution by the Central Committee and USSR Council of Ministers
in December 1972. The environmental issue had finally reached the highest political agenda in the USSR.

CONCLUSIONS

Officials of scientific and governmental institutions were influential in placing the water quality issue on the agenda in all three case studies examined in this chapter. The most prominent policy activists were representatives of research institutes and policy councils subordinated to the Academy of Sciences and the State Committee for Science and Technology. Through skilled use of formal and informal channels, these officials raised the awareness of Soviet policy makers and persuaded them to undertake major policy initiatives to combat water pollution and other environmental abuses. In the process, they exerted substantial influence on the leadership's agenda and the substance of the resulting policies. In sum, the chapter provides further support for the hypothesis that entrepreneurial Soviet officials were a major source of agenda items in the early 1970s.

Continuing the pattern identified in Chapter IV, ministerial officials were not an important influence on the agenda during this period. Gosvodkhoz officials participated in the early stages of the discussion in 1961-62. Gosplan's department of water resources was also reported to have formulated a draft water law at that time. These activities confirmed our expectation that bureaus tend to be vigorous proponents of policy initiatives in their first years in operation. Gosvodkhoz participation, however, declined sharply in the mid-1960s while Gosplan's proposal was apparently shelved. Moreover, aside from an appeal to accelerate preparation of the new water law at a 1968 conference, the USSR Ministry of Reclamation and Water Management was not directly involved in this legislative initiative. This ministry, created in 1965, was also a bystander in both the Baikal issue and the 1972 environmental decisions, despite the oppor-
tunities provided therein for expanding its pollution control functions. 48

The case materials thus reinforce the conclusion that the governmental ministries were not an important source of agenda items in the water quality arena. Once again, there are several possible explanations, including a lack of entrepreneurial agency directors committed to water quality, and the preoccupation of Minvodkhoz and other regulatory agencies with program implementation. As suggested by the health ministry's aloof stance in the 1960 water management decision, the fear of exposing agency weakness may also have deterred Minvodkhoz from lobbying for additional environmental functions.

All three case studies, on the other hand, underscore the close involvement of the Academy of Science in agenda setting. The analysis also revealed the rise of the State Committee for Science and Technology as a major policy force. These agencies' most active policy entrepreneurs include Kolbasov, Galazii and Innokentii Gerasimov. Each was engaged in continuous behind-the-scenes lobbying for stronger pollution controls. They also showed exceptional skills at defining and framing issues to conform with the political climate of the time. Contacts with high-level gatekeepers were another resource used to advance their respective issues.

In addition, the influence of these actors extended across specific water quality decisions. Kolbasov, for example, was influential in both the 1970 water law and the 1972 environmental statutes, while Inokentii Gerasimov was a pivotal force in the Baikal controversy and the 1970 environmental resolutions. In sum, agenda influence does not appear to have been as narrowly channeled as Gustafson has argued.

48 In fact, P. N. Shternov, the agency's chief anti-pollution official, explicitly argued against Volkov's proposal to broaden the ministry's regulatory responsibilities at Baikal and elsewhere. P. Shternov, "They have sufficient powers," Literaturnaya gazeta, November 15, 1967; trans. in CDSP, XIX, No. 48, p. 8.
The analysis also revealed significant involvement by senior RSFSR officials in the 1972 environmental decrees. However, since such involvement was limited to one case study, it is unclear whether this was an isolated instance or an indication of a broader involvement in agenda setting.

The data suggest two further observations. First, both water law codification and the Baikal issue were facilitated by the Soviet leadership change in October 1964. In each instance, media coverage increased and officials became more willing to question past decisions. Given Khrushchev's low tolerance for environmental debate, a more open atmosphere would probably have emerged under almost any successor administration. However, the upsurge of environmental concern was more than just a response to the change in personalities, but appears to have reflected a willingness to experiment with new approaches to a problem that was clearly not being properly addressed by existing policy. In this sense, the succession was itself a contributing factor to the government's increased receptivity to environmental issues in the early Brezhnev years. Thus, even in the absence of a formalized campaign, the increased glasnost' accompanying political successions would appear to provide an additional impulse to the movement of long-neglected issues onto the agenda.

Finally, there is scattered evidence that the growing international concern over the environment in the late 1960s and early 1970s may also have spurred agenda change in the USSR. Gerasimov's frequent participation in foreign ecological conferences, for instance, appears to have been positively correlated with his criticism of environmental damage in the Soviet Union and his lobbying on behalf of legal and institutional changes. Upon returning from the September 1968 UNESCO conference in Paris, Gerasimov reported that the gathering had shown that "diverse changes of a predominately negative character are taking place in the environment and are acquiring ever more threatening dimensions." He also noted approvingly that Sweden had formed a
special national committee of scholars to prepare for the conference.

This committee carried its work to the point of adopting a special law of the government on protecting the environment and the rational exploitation of its resources on the territory of Sweden."

The imprint of these experiences was clearly evident in Gerasimov's subsequent writings and activities on behalf of the 1972 environmental resolutions. E. K. Fedorov, Chairman of Gidrometsluzhba, was another official with close involvement in international events. While speculative, Fedorov's contacts with international environmental experts may have played a role in his agency's assumption of important new monitoring functions in the 1972 environmental resolutions.
CHAPTER VI

CONCLUSIONS

This study has examined three fundamental questions about the formation of the policy agenda in the USSR. First, who participates in identifying emerging policy issues in the Soviet Union? Second, to what extent are officials of ministries, state committees and other bureaucratic organizations influential in persuading the leadership to address new issues? And third, what role do crises, leadership priorities and other factors play in making an issue ripe for decision making?

To examine these questions, three hypotheses were formulated pertaining to the agenda setting process. These hypotheses were then examined through detailed analyses of seven major water quality initiatives undertaken in the USSR from 1917 through 1972. The findings of the research and their implications for the study of Soviet policy making are summarized below.

RESEARCH FINDINGS

Participation in Agenda Setting

The analysis revealed that a broad range of individuals and institutions participated in bringing water quality problems to the attention of the Soviet leadership in 1917-72. The most important participants can be categorized in three broad groups. The first consisted of the directors of government agencies responsible for water management, public health and science policy. This group included two Commissars of Public Health; the Commissar of Municipal Services; two Presidents of the USSR Academy of Sciences; and the Chairman of the State Committee of Science and Technology. In the seven case studies, these individuals were not simply executing decisions previously adopted by higher level bodies. Rather, they were actively engaged in identifying problems for consideration by the leadership, for-
mulating proposals to resolve them and lobbying higher officials on their behalf.

The second group of participants were the directors and senior officials of administrative and research agencies engaged in water management. These officials spanned a broad range of disciplines. They included, for example, technical experts such as A. N. Sysin of the Health Commissariat's sanitation administration; V. F. Lebedevaia of the All-Union State Sanitary Inspectorate (VGI); N. S. Stroganov of the Academy of Municipal Services; and G. A. Galazii of the Academy of Science's Limnological Institute at Lake Baikal. The group also included O. S. Kolbasov and G. A. Aksenok, both prominent jurists affiliated with the Academy's Institute of State and Law (IGPAN).

In addition, important roles were played by the heads of several top water resource policy councils, including: V. V. Zvonkov of the Academy of Science's Council on Water Management Problems; N. V. Mel'nikov of the Academy's Commission for the Study of Productive Forces and Natural Resources; and I. P. Gerasimov of the GKNT's Academic Council on the Study of the Complex Use and Renewal of Natural Resources. As with the first group, the activities of this cluster of participants spanned all stages of agenda setting, including preparing studies and policy proposals, circulating these within the policy community and among senior officials and drafting legislation for adoption by the leadership.

The third group of agenda participants consisted of individual writers, scholars and environmental activists. These actors were generally affiliated with academic and other organizations not defined as specialized bureaucratic institutions according to the criteria used in this study. Representatives included the prominent Moscow University legal scholar, N. D. Kazantsev; the outspoken writers, Oleg Volkov and Vladimir Chivilikhin; and numerous others.

The large number of individuals engaged in identifying water quality issues and the diversity of their activities suggest that
agenda setting is not a monopoly of the top leadership. Rather, it is a process in which a broad range of actors may engage in active and meaningful participation. This finding, supported by all seven case studies, is the first key conclusion of the research.

The Influence of Bureau Officials on Agenda Setting

As indicated above, the most prominent participants in agenda setting were senior and mid-level officials of bureaucratic organizations responsible for various aspects of water management. The study's second principal finding is that these officials were not only actively engaged in identifying water quality problems, but were a major force in the leadership's decision to devote serious attention to these difficulties. This is indicated by the strong support for Hypothesis 1, which postulated that officials of specialized bureaucratic institutions were highly influential in placing the water quality issue on the agenda from 1917 to 1972. This hypothesis was supported by six of the seven initiatives examined in the study.49

Analysis of the 1922 public sanitation decree, for example, concluded that this measure was directly inspired by Health Commissar Semashko and his chief advisor, Sysin. The need for formal controls over water quality was first conceived and undertaken by Semashko through the kollegija, or policy making board, of the RSFSR Health Commissariat (NKZdrav). The controls were then advocated in a special report to the All-Union Central Executive Committee (VTsIK); placed on the leadership's agenda by the VTsIK; elaborated into a draft decree by Sysin; and finally adopted into law by the Sovnarkom with the backing of Lenin—a

49 The exception was the unsuccessful attempt by Stroganov and other officials to promote a major overhaul of water management in 1937-38. Coming on the heels of the 1937 pollution controls, this initiative appeared to have a significant chance of success. In the event, however, the proposals failed to exert any influence on the leadership's agenda.
close personal friend of Semashko. From inception to agenda entry, the 1922 law is thus viewed as the product of an initiative put forth almost exclusively by the health bureaucracy.

The 1937 Sovnarkom resolution was a second illustration of successful bureau influence on the agenda. This action, taken at the height of Stalin's industrialization drive, was found to have been inspired by senior and mid-level sanitary officials led by NKZdrav director Vladimirskii and N. S. Stroganov of the Academy of Municipal Services. The call for further steps to stem pollution was first accepted by the All-Russian Congress of Soviets in 1935, which authorized the preparation of a national survey to assess the depth of the problem. The findings of the survey, together with a draft resolution compiled by NKZdrav, the VGSI and Sysin's Institute of Communal Sanitation, were apparently forwarded to higher decision makers by a major conference of NKZdrav officials. Twelve months later, the Sovnarkom adopted a law embodying point-for-point the recommendations of this gathering, suggesting that the proposals drafted by the bureau officials were highly influential in the Sovnarkom's decision to address the problem.

The April 1960 resolution on multipurpose water management was a third illustration of the influence of agency officials. In this instance, representatives of the USSR Academy of Sciences were the most vigorous proponents of the water management reforms. The initiative was conceived by Academician Zvonkov, director of an Academy policy council on water resources. Capitalizing on an upsurge of interest in the environment spawned by the Academy leadership at the republic level, Zvonkov formulated a comprehensive plan for regulating the discharge of harmful wastes in the late 1950s. This plan gained the support of a broad range of water resources officials and experts, and was formally advocated by Zvonkov in a book published in early 1960. As occurred in 1937, this action was followed by the adoption of a Council of Ministers resolution embodying nearly all of the major actions advocated by the Zvonkov report.
The three critical water quality decisions adopted by the Brezhnev administration were also revealed to have been spurred by mid-level Soviet officials. In the codification of water law in 1970, the primary initiator was Oleg Kolbasov, senior associate at Institute of State and Law. Drawing on his recognized expertise in environmental law and contacts with senior officials, Kolbasov was apparently instrumental in inclusion of water law reform on the agenda of the Supreme Soviet in mid-1964. As director of the legislative drafting committee formed to prepare a new water law, Kolbasov was well-positioned to guide the initiative to conclusion in 1970. Thus, while direct evidence is lacking on how the issue actually reached the Politburo agenda in 1966, there is substantial indirect evidence suggesting that Kolbasov and other agency officials played an important part in bringing the issue to the fore.

The adoption of safeguards against the pollution of Lake Baikal in the late 1960s—the seminal environmental controversy in the USSR thus far—was also determined to have been influenced by officials of specialized research and governmental agencies. Though aided by a wide-ranging press debate on the problem, the leadership's decision to address the problem appears to have been inspired by a broad-ranging basin-management plan put forth by I. P. Gerasimov, of the Academy's Institute of Geography, and Nikolai Trofimuk, Vice President of the Academy's Siberian Department.

Finally, the comprehensive environmental resolutions adopted by the USSR in June and December 1972 were found to have reached the top agenda largely in response to proposals by Kolbasov and other officials affiliated with the Academy of Sciences, the State Committee for Science and Technology, and the RSFSR government.

In the majority of the cases, the analysis confirmed at least two of the four indicators used to measure bureau influence on the agenda: i.e., the timing of proposal and leadership response; similarity of content between proposal and decision; interaction between advocate and agenda officials; and participation of the initiating officials in decision making. The ability to confirm
multiple indicators of agenda influence increases our confidence in the conclusions reached and provides a reasonable assurance that the findings of this study will be supported by further research.

Determinants of Successful Initiatives

Although the hypothesis on bureau influence was firmly supported, the research was less definitive on the factors that facilitated the success of the six initiatives that reached the agenda in 1917-72. Analysis of this topic was guided by Hypotheses 2 and 3. The former postulated that agenda access increased when policy advocates successfully linked their issues with major leadership priorities and urgent, pollution-related crises. The latter hypothesized that agenda access was facilitated when bureau officials developed viable, broadly supported policy proposals.

The relationship between agenda influence and linkages with policy priorities was supported by three of the six case studies. These were: the 1922 sanitation law, the promotion of which was linked to the leadership's concern with health policy; the 1937 industrial emissions statute, which was linked to concern with urban services; and the codification of water legislation, where linkages with agricultural reform appear to have been important. The remaining initiatives, in contrast, were either not linked with overarching policy priorities, or the linkages did not appear to significantly affect agenda access.

Similarly, the hypothesis that linkages with on-going crises aided agenda access was supported by only three case studies: the 1922 sanitation law, the 1960 water management resolution and the protection of Lake Baikal. In the remaining cases, the issues responded to a gradually worsening problem rather than an urgent crisis or disaster.

The case materials provide firmer support for Hypothesis 3. In five of the six successful initiatives, the proponents developed broad inter-agency backing for their proposed pollution
controls. This suggests that the measures were technically feasible and consistent with current political and budgetary realities. The viability of the proposals and the support shown for them appeared influential in their eventual adoption by senior policy makers.

In sum, judging from study, the chances of an issue reaching the agenda are enhanced when officials develop broad support for balanced policy proposals. In some cases, agenda access is also enhanced when the issue is placed in the context of important leadership concerns and serious crises. The correlates of successful agenda setting, however, clearly include a variety of other factors as well. Identifying these factors, and determining the conditions in which they are influential, is a fruitful avenue for further research.

FURTHER INSIGHTS ON AGENDASETTLING

In addition to furnishing preliminary answers to the questions posed in the study, the case materials provide several additional insights on the formation of the Soviet policy agenda.

Ministry Officials and Agenda Setting

Drawing on the theory of bureaucracy developed by Downs, we hypothesized that officials of bureaucratic organizations were a major source of initiatives to combat water pollution in the USSR. The motivation to generate new issues was considered to be especially strong among national and republic ministries charged with administering Soviet policy on natural resources, health, fishing and similar activities. This was based on Downs' argument that certain ministry officials--especially the "climbers" and "advocates" that tend to populate newly established bureaucratic institutions--are motivated to push for new programs as a means of increasing their agencies' power, prestige and resources.

As hypothesized, our research did reveal that bureau officials were influential in shaping the agenda in the area of water pollution control. Contrary to expectations, however, the most
prominent agenda setters were not affiliated with government ministries. Ministry officials, in fact, were found to have been instrumental in only two case studies: the 1922 and 1937 sanitation decrees. In the remainder, ministry officials failed to play a visible role in policy initiation. The USSR Ministry of Health ceased promoting the control of water quality in the mid-1950s, while the republic agencies created by the 1960 water management decision failed to sustain an active role in policy initiation beyond the early 1960s. More striking, the USSR Ministry of Reclamation and Water Resources (Minvodkhoz)—the chief pollution control agency since its formation in 1965—was a bystander in all three Brezhnev-era decisions investigated. It thus passed up numerous opportunities to press for a greater role in water pollution control.

Three explanations for the low involvement of Soviet ministries were suggested. First, agency directors and other top officials were either not deeply committed to the problem of water pollution or were personally disinclined to lobby aggressively for new policies. Second, agency attention was committed to higher-priority tasks. In the case of the health ministry, the protection of public water resources—and thereby the prevention of diseases spread by water-borne bacteria—clearly took second place to the treatment of these and other diseases. For their part, the republic and national water management institutions placed highest priority on irrigation and reclamation activities. This deprived internal officials responsible for water quality of the resources and attention needed for their initiatives to succeed. And third, the incentive to lobby for additional responsibilities for water pollution control was negated by a countervailing desire not to call attention to the poor performance of their agencies in carrying out water quality activities previously entrusted to them. In a word, lack of participation in agenda setting was dictated by self-preservation.

For the above reasons, ministry officials were not vigorous proponents of agenda change in the sphere of water pollution
control. Given its importance for understanding ministry behavior and the policy process more broadly, this finding deserves further investigation by students of Soviet politics.

The Academy of Sciences and Agenda Setting

In contrast to the passive role of ministry officials, officials of the USSR Academy of Sciences were extremely active in promoting agenda initiatives to control water pollution. Academy officials were, in fact, the primary initiators of all four of the post-Stalin decisions examined. Two prominent initiators—Zvonkov and Gerasimov—were directors of Academy research councils. Trofimuk was a Vice President of the Siberian Department of the Academy. Galazii directed the Baikal Limnological Institute, while Kolbasov and Aksenonok worked at the Academy's principal legal institute. Gerasimov's role in the Baikal case was also enhanced by his affiliation with the State Committee of Science and Technology, which worked closely with the Academy on this problem.

The close involvement of Academy officials in agenda setting suggests that Academy recruitment policies, resources and institutional structures are conducive to attracting and sustaining policy entrepreneurs. Thus, while the study has not explicitly examined the Academy's role in agenda setting, a further important finding of our research is that Academy institutes and policy councils are a key institutional base for elevating policy proposals onto the national policy agenda. This finding also deserves further investigation.

Access Channels and Agenda Setting

A third insight is that policy entrepreneurs have a variety of channels for placing proposals on the decision agenda in the USSR. In the 1922 decision, the initiative apparently reached the leadership through both NKZdrav's formal reporting channels to the Sovnarkom and Semashko's personal relationship with Lenin. In the
1937 decision, NKZdrav's formal reporting channels with the Secretariat were probably decisive. In the 1960 water management resolution and the 1969 decision on Lake Baikal, proposals apparently reached the leadership through the Academy's communication channels with the Central Committee Secretariat, Gosplan and the Council of Ministers. The initiatives for the 1970 water legislation and the September 1972 environmental resolution were apparently channeled through the Supreme Soviet Presidium. Thus, while information no doubt reached the leaders through other channels as well, the evidence suggests that formal, institutional channels—particularly between the Academy and other research institutions and the leadership—were an important conduit for bringing policy proposals to the attention of top decision makers.

The access channels utilized, moreover, varied considerably between decisions. In two instances, legislative channels were influential; on other occasions, the Central Committee Secretariat was probably the key receptor. In the remaining cases, governmental channels were the primary vehicle for funnelling initiatives to the leadership.

Our research thus casts doubt on Kelley's view that formal, bureaucratic channels are ineffectual as a means of raising environmental issues in the USSR. This argument reflects a belief that formal reporting channels between the bureaucracy and the policy makers are dominated by industrial interests and thus are effectively closed to initiatives to protect the environment. It follows, in Kelley's view, that the only way to focus attention on environmental problems is to mobilize opposition through the press or other informal channels.

Our research suggests that Kelley is correct in playing down the importance of ministerial communication channels, since the ministries charged with day-to-day administration of pollution control did, in fact, play only a minor role in agenda setting after the 1930s. However, Kelley appears to have overlooked a wide range of other, non-ministerial, channels through which environmental officials can transmit information and proposals to
ERRATUM

At the bottom of page 108, one line of text was inadvertentiy omitted. The missing text is as follows:

...senior leaders. In so doing he has overemphasized the importance...
of the press as a vehicle for introducing substantive policy measures into the decision making process. Finally, his research appears to have overemphasized the role of grass-roots protest movements as a force for agenda change in the USSR. While such movements may be important at times—Baikal is an obvious example—in many other instances, key decisions appear to be not so much the result of intense public controversy, as the product of ongoing, behind-the-scenes jockeying between agenda gatekeepers and officials seeking to elevate issues of special concern onto the top agenda.

Constraints on Agenda Influence

Our research also sheds light on the limitations facing bureau officials seeking to influence the agenda. Scholars have expressed widely-differing views on this issue. Brzezinski argues that political culture, censorship and the dominant role of the Party apparatus leave little scope for agenda influence by actors outside the leadership. 50 This view is shared by Gustafson, who characterizes specialist influence on the agenda as "fragile, contingent, and necessarily opportunistic." 51 At the opposite end of the spectrum is Stewart, who contends that experts and groups have wide latitude for influencing the agenda. 52

Although research on a single policy area cannot resolve this controversy, our findings are closer to the position taken by Stewart. In each of the case studies—including the two initiatives undertaken during the period of "high Stalinism"—agenda setting is depicted as a fluid and dynamic process in which


officials try in a variety of direct and indirect ways to gain leadership acceptance for their ideas. These efforts are by no means always fruitful, as illustrated by the unsuccessful water management reform proposals of 1937-38 and the long gestation period required to bring about the six successful initiatives. However, during the gestation period, the policy entrepreneurs identified in this study were not passively waiting for the soil to become fertile, as Gustafson implies. Rather, they were actively planting ideas in the minds of senior officials, "fertilizing" those ideas with new information and research, and using a variety of tools to bring their "seedlings" to maturity.

As with any endeavor, successful agenda setting requires a combination of ingredients--including a serious problem, a workable policy proposal, support from knowledgeable experts, a receptive elite audience, and a compelling motivation for the leadership to address the problem rather than any of a number of competing concerns. In this sense, success is "contingent" on the above ingredients. However, overemphasizing the contingencies--and underemphasizing the skills that can greatly increase the chances of an initiative's success--can lead to a distorted and incomplete picture of the agenda process.
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