

# Environmental Challenges in the NIS: Recommendations for the New U.S. Administration

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**T**he Soviet Union left a legacy of some of the most severe environmental disasters found on our planet—disasters that in many cases have only worsened over the ten years since the USSR fell apart. Today, from Chernobyl to Chelyabinsk, the states of the former USSR are home to a litany of environmental “worsts”: The southern Urals region, including Russia’s Mayak complex, has the world’s worst concentration of radioactive pollution and the largest concentration of nuclear reactors (including decommissioned reactors). Russia’s Norilsk complex is reportedly the largest stationary source of air pollution in the world. The Caucasus region of southern Russia is the site of the only new desert formation occurring in all of Europe. Russia’s Lake Karachai is reportedly the most polluted spot on earth. As these problems intensify, they may well create the worst set of challenges to confront the health and well-being of populations in countries well beyond Russia’s own borders.

Against this background, this article is meant only to reflect some general thoughts regarding the extent of environmental damage in the former USSR; the economic, social, and political impacts; obstacles and constraints in the ability of the newly independent states (NIS) to address them; and their implications for U.S. policy. Although there is certainly variation among the newly independent states, the article offers only a broad overview of key issues—in the hope of stimulating some new thinking and new approaches about U.S. involvement in the area—especially at a time when some NIS leadership has begun to show signs of moving ever farther away from addressing these issues responsibly and effectively.

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### Environmental Challenges

Many Americans seem to associate environmental challenges in the former Soviet Union with a series of high-profile disasters: the accident at Ukraine's Chernobyl nuclear power plant; the drying up of the Aral Sea in Central Asia; the legacy of the Soviet nuclear, chemical, and biological weapons complex; contamination of the Caspian Sea that threatens the global caviar trade. Although those disasters may no longer make the front pages of Western newspapers, they indeed have had major consequences and may be getting worse with time.

The 1986 Chernobyl disaster, for example, in some ways may be a greater threat today than earlier in the decade, as the massive concrete and metal sarcophagus around Chernobyl's fourth reactor—built rapidly as a temporary measure to seal off radiation from the destroyed reactor—has begun to crack. There is now reportedly a serious danger that the rain and moisture seeping inside will begin to mix with the radioactive material on the reactor floor, leach into the groundwater, and migrate into the Dnieper River—the main waterway of Ukraine and the source of drinking water for about two-thirds of its population. That only compounds the continuing dangers of the radioactive material inside the sarcophagus, which will remain hazardous for decades to come, and the large quantities of radioactive wastes and contaminated equipment currently stored in hundreds of sites around the reactor.

Widespread radiation contamination also continues to threaten other parts of the NIS and beyond, mainly from the legacy of nuclear weapons production and testing and serious problems in nuclear waste disposal. After forty years of nuclear testing at Semipalatinsk, in Kazakstan—where between 1949 and 1989 about 470 nuclear devices were tested, about one-fourth of them above ground—tens of thousands of square miles are reportedly contaminated by dangerous levels of cesium-137 and other radioactive materials. Specialists expect a serious radiation problem in the lower Volga region, where radioactive materials from more than twenty underground explosions remain in the soil and threaten to mix with groundwater and further contaminate the Volga River and the Caspian Sea. And radiation pollution in Krasnoyarsk-26, Tomsk 7, and Mayak—the three sites where plutonium was used in nuclear weapons production in the Soviet Union—not only remains high but threatens to intensify. Because nuclear wastes were often dumped directly into the river system and injected into the ground, high levels of radiation contamination in Siberia's rivers and groundwater system are now particularly worrisome not only for Siberia's population, but for the West. Highly radioactive waste has migrated more than 1,500 km through the Siberian river system to the Arctic Ocean, where traces of plutonium from these reactors reportedly have been found.<sup>1</sup>

With an official 1998 stockpile of more than 40,000 tons of chemical weapons (the largest in the world)—and with little regard for environmental consequences in the production, testing, and storage of those weapons—Soviet chemical weapons production also accounts for some of the most severe and complicated sources of pollution in the NIS. Again, the danger may be growing. Russian experts report that Russian laboratories are continuing research into new and perhaps

deadlier chemical poisons, particularly at Russian military base No. 42734, located at Shikhany, near Saratov, where Russia's chemical industry is concentrated.<sup>2</sup>

The Aral Sea, featured on the front page of the *New York Times* last year, has become a particularly poignant symbol of environmental devastation in Central Asia. Considered the world's fourth-largest lake forty years ago, the Aral Sea has shrunk to about one-third of its 1960 volume and half of its geographical size because of the diversion of the waters that feed it. The resulting increased salinization, severe windstorms, and extensive salt and dust storms from the sea's dried bottom have wreaked havoc with the region's agriculture, the ecosystem, and the population's health. The shrinking sea is also exacerbating the dangers posed by exposure of buried anthrax bacteria left over from the Soviet biological weapons program.<sup>3</sup>

Finally, pollution of the Caspian Sea—from the severely contaminated waters of the Volga River, the massive oil and gas exploration in the area, and the vast amounts of hazardous waste and sewage dumped into the sea—has become compounded by the continually rising level of the Caspian's waters, which has caused flooding and displaced local populations. All of these problems threaten the populations of the NIS countries surrounding the sea, who face floods, contaminated food and water, depletion of fish, and decline in the health of one of the region's biggest industries, the worldwide caviar trade. Beachgoers in Azerbaijan joke that they no longer need to purchase commercial suntan oils, as the sea provides a constant, heavy film of oil free of charge. According to several predictions, the Caspian will likely continue to rise for several more years, up to six to twelve feet higher than current levels.

But these disasters are only part of the story, as the steady pollution of NIS water, land, and air continues to worsen. The long-standing practice of dumping industrial effluents and untreated municipal wastes directly into rivers, the seepage of fertilizers and pesticides from agricultural fields into surface water, spills and leaks from the oil and gas industry, and other factors contribute to the severe pollution of rivers and underground water tables and the contamination of most drinking water sources. Cities throughout the NIS have few, if any, water or sewage treatment facilities. Russian and Western estimates suggest that less than half of Russia's population has access to safe drinking water; in many areas of Central Asia, drinking water is taken directly from canals that, in the words of one high-ranking Turkmen official, are "nothing more than a sewage ditch."<sup>4</sup>

Heavy use of pesticides, herbicides, defoliants, and fertilizers in agricultural fields, coupled with poor irrigation and drainage systems, has depleted much of the soil throughout the NIS. In some areas of Russia, huge applications of pesticides—more than forty-five pounds per acre in some regions—continue to result in severe poisoning, not only of the fields but of nonagricultural parts of the NIS and their rivers. And the concentration of heavy industry in this region combined with the scarcity of pollution control technology continues to cause serious air pollution. Observers in cities such as Russia's Magnitogorsk complain of a "cocktail of chemicals" that has made the air unfit for the city's inhabitants to breathe.<sup>5</sup> At least two hundred cities in Russia alone exceed maximum permissible con-

centrations of a range of air pollutants, and at least eight cities have levels of air pollution at least four times that of Los Angeles, where air pollution in the United States is legendary. According to official Russian data, more than 40 million people in Russia live in areas officially designated as environmentally dangerous for human habitation.

Soviet practices of exploiting natural resources with little regard for environmental consequences continue to exacerbate these problems. Oil leakage from Russia's aging pipeline system, some caused by sabotage and theft from the oil pipelines, and pollution from the energy industry's poorly monitored extraction and production processes have created devastating environmental problems throughout Russia and the Caspian region; according to formal estimates, up to 70 percent of Russia's oil pipelines require urgent repairs or replacement. Likewise, deforestation caused by irresponsible logging methods, forest fires, industrial pollution, and other factors threatens some of the most extensive forests in the world, particularly in Central Siberia.

### **Impact**

Although it is difficult to establish a precise cause-and-effect relationship, there is no doubt that the impact of environmental problems on the social, economic, and political health of the NIS countries has been enormous. Major health indicators, for example, continue to deteriorate. Russia's life expectancy over the past fifteen years has declined dramatically, as it has elsewhere in the NIS, falling to as low as thirty-eight years in some Central Asian communities. Increases in the incidence of cancers, nerve diseases, birth defects, and a vast array of other diseases have been associated with high dioxin levels, radioactivity, and other environmental causes. A researcher in Irkutsk, where dioxin compounds are used as pesticides and are by-products of pulp and paper processing, has found "dioxins everywhere: in local food, water, soil and sewage,"<sup>6</sup> reportedly accounting for part of the rise of those afflictions there. A joint U.S.–Russian study in 1996 found that one-fourth of kindergarten children in the city of Saratov had lead concentrations above the threshold at which intelligence is impaired.<sup>7</sup>

Radiation exposure in Belarus and Ukraine has reportedly led to increased thyroid and other cancers, just as the confluence of environmental problems has kept infant mortality high in Uzbekistan and Turkmenistan. Infant mortality in the Aral Sea area is estimated to be as high as 160–170 per 1,000—meaning that an average of 1.6 out of every ten children born there do not survive until their first birthday. High levels of air pollution in many parts of the NIS have been associated with dramatic increases in lung disease, increases in serious and chronic respiratory problems such as asthma, bronchitis, and pneumonia, and more skin allergies in children. As Murray Feshbach has pointed out, in some regions of Russia, the health of the population reportedly has deteriorated so dramatically over the past decade that by the late 1990s, the army could not draft a single person.<sup>8</sup>

The economic costs of the environmental problems likewise have been high. Although most of the environmental problems are results of economic expediency, as planners and practitioners ignored environmental impact in the push for

economic gain, in many regions of the NIS they have become a major brake on economic growth.

The cost environmental problems have already exacted on the economy, for example, has been enormous. Chemical pollution of agricultural fields throughout the NIS has already led to diminished production at higher cost. Inordinately heavy use of pesticides, herbicides, defoliant, and fertilizers in Central Asia's cotton cultivation, coupled with poor irrigation and drainage systems, has depleted the region's soil. In Azerbaijan, about a million hectares of land reportedly has been taken out of cultivation; in parts of Central Asia, the figure is higher. Likewise, although Russian officials state that nuclear wastes were injected into the ground primarily for safety reasons,

most observers believe that this was done for short-term cost containment; the long-term economic costs, however, could be enormous if, as now seems likely, the materials are not fully sealed in the ground.

Environmental specialists in Russia predict that if current environmental trends continue, the sturgeon unique to the

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North Caspian will be destroyed over the next four to eight years, devastating the region's key exports, including caviar. The Caspian Sea accounts for an estimated 90 percent of Russia's sturgeon catch and caviar production, which in turn reportedly accounts for up to 90 percent of the world's caviar demand. And deterioration in the health of the workforce reportedly has led to vastly higher rates of absenteeism and lower productivity in a number of NIS industrial enterprises. One Russian team has estimated overall economic losses from environmental degradation at 10–12 percent of GDP;<sup>9</sup> others believe the costs are many times higher.

Compounding these impacts are the costs of environmental cleanup—an expensive process whose price tag increases as remediation is delayed. A joint U.S.–Russian effort, funded by USAID, estimated that upgrading manufacturing processes at the Baykal'sk Paper and Pulp Mill to eliminate emissions of several toxic materials would cost an estimated \$600 million.<sup>10</sup> Minimum estimates of clean-up costs for the Aral Sea range in the hundreds of millions of dollars, and for Chernobyl, in the billions. According to reports by Murray Feshbach and others, Russian estimates of the cost of raising the quality of Russia's drinking water to official standards range as high as \$200 billion; the figure for clean-up of the coast of Russia's maritime territory in the Far East is estimated at about \$5 billion over twenty years; and to raise the nuclear safety levels to official standards throughout Russia would require about \$26 billion.<sup>11</sup> Finally, some argue that environmental problems and poor enforcement of environmental regulations also exact an economic cost by exacerbating the gap between rich and poor and discouraging foreign investment.

All of these problems have had significant social and political impact, dividing populations and governments and exacerbating tensions and conflicts within and among these new states. Local communities have divided bitterly over environmental issues that affect their everyday lives and their hopes for their children. Serious tensions arise, for example, between those who want to close or scale back production at the many factories poisoning the environment, and workers at those factories whose livelihood depends on continued production.

The effects of nuclear explosions, plans for storage of spent nuclear fuel, and the planned destruction of chemical weapons likewise have galvanized local populations in bitter disputes. Although the Russian Duma ratified the Chemical Weapons Convention in December 1997, for example, a June 1999 resolution states that Russia lacks the conditions for the safe destruction of chemical weapons. Heated debates continue on whether the weapons can be destroyed safely, on the quality of any environmental impact assessments, and over who should be responsible for the effort. Many are worried not only about the environmental impact of the decisions, but also about the fact that decisions appear to be made arbitrarily, secretly, and often for personal gain. People are fearful that this will remain the case, particularly if the effort remains under the auspices of the military. The same fears and tensions have been provoked regarding plans on the part of Russia's Ministry of Atomic Energy (Minatom) to store spent nuclear fuel from other countries in Russia. And controversy has grown with public opposition to development of the oil sector, to current logging methods, and to other practices viewed as destroying the health and environment of the NIS populations. In some towns, such as those affected by the nuclear disasters at Mayak, some of these tensions that pit local communities against governments have also developed an ethnic cast, particularly when environmental devastation seems disproportionately to affect the non-Russian population.

Cross-border environmental problems also show increasing potential to trigger conflict among new states and internationally. As water becomes more scarce and polluted in areas of Central Asia, for example, spontaneous armed clashes and conflicts among Turkmen, Uzbek, and Kazak citizens have occurred over access to the waters that must be shared among them. Border control officials on the Uzbek-Kyrgyz border reportedly extort water from farmers seeking to cross the border to sell their produce; high government officials have also begun to use water as a political football in interstate relations. Tensions caused by water are exacerbated in this region by other cross-border environmental problems, such as fears of radioactive contamination from deteriorating storage and reprocessing facilities. For example, the rapidly deteriorating Malyi Sui uranium dump, on Kyrgyzstan's border with Uzbekistan, has created additional strains in the already tension-ridden Ferghana Valley.

Tension between Russia's Volga region and bordering Kazakstan is also growing over cross-border pollution, including the serious pollution of the Ural River as it flows through Russia's Orenburg oblast into northwestern Kazakstan, just as strains are growing over China's plans to redirect some water from the Irtysh River that flows through China to Kazakstan. Kazakstan argues that China has

already lowered the water level and fears the potential impact of China's plans on the drinking water in the heavily industrial northeast part of Kazakhstan. Cross-border environmental issues also pervade relations among the other newly independent states. The impact of Volga industries and fishing practices on the sturgeon population in the Azov–Black Sea basin has become a major source of controversy among Russia, Ukraine, and to a lesser extent, Georgia, Turkey, and Bulgaria. The potential for international tension stemming from environmental issues and oil pollution in the Caspian Sea is increased by the fact that all five littoral states (Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan) suffer the terrible environmental impacts of energy exploration but also see the development of Caspian oil as vital to their national interests.<sup>12</sup>

Some argue that the potential for conflict may be overstated, as governments often use environmental issues as excuses to pursue other, quite unrelated goals. This is frequently the case. Although environmental issues have largely been sidelined in the oil rush in the Caspian region, for example, Russia has focused on environmental dangers to oppose the construction of the proposed Trans-Caspian gas pipeline and any other pipelines in the Caspian Sea that would weaken Moscow's hold over oil and gas exports. It seems to be irrelevant that Russia itself has been the biggest polluter of the Caspian and that Russia's planned "Blue Stream" gas pipeline to Turkey via the Black Sea will likely impose far greater environmental damage. But justified or not, these excuses can take on a life of their own and exacerbate the considerable tensions that have already emerged from such serious environmental devastation.

### **NIS Government Policies**

All of these challenges are only examples of the magnitude of environmental destruction throughout the NIS, but they demonstrate a range of impacts that go well beyond questions of health and environment alone. By all outward appearance, the NIS governments have demonstrated great concern, and the decade since independence has seen new policy initiatives in all of the countries toward environmental protection and cleanup. Environmental legislation has remained strong and tough, as all of the NIS governments have declared the environment a major priority and have adopted a mass of new laws, decrees, and environmental programs. Kazakhstan's 1997 National Environmental Action Plan, Ukraine's 1998 Environmental Plan, and the plans and policy statements of other NIS governments—as well as the myriad laws and decrees in Russia over the past decade—buttress a body of environmental law inherited from the Soviets that was already quite stringent. According to most NIS legislation, at least on paper, fines are harsh, law enforcement is strict, and environmental monitoring is highly controlled. NIS governments have stressed the creation and protection of national parks and environmental education in the public schools, and have set up mechanisms to cooperate in addressing cross-border and regional environmental problems.

Perhaps most important, most NIS governments have publicly acknowledged the role that nongovernmental organizations (NGOs) should play in addressing environmental issues. The growth of NGOs has been one of the most positive

developments in the NIS over the past decade: After an initial spurt of NGO activity in the late 1980s and the 1990s, environmental activism seemed to decline; but over the last few years, the strength and public appeal of environmental NGOs seemed to grow, and environmental and civic groups and organizations have been playing an increasingly important role in publicizing conditions and forcing action on key environmental problems.

Despite those efforts, environmental protection remains mired in controversy, progress in addressing environmental challenges in most of the NIS countries has been limited, and despite words to the contrary, some NIS governments have cracked down viciously on the environmental NGO sector. Environmental laws throughout the NIS are often internally contradictory or weakly implemented. Fines for environmental pollution are either not collected or were made meaningless by inflation. Despite the proliferation of law enforcement institutions, the widespread corruption and frequent lack of clear jurisdictions among federal agencies have meant that environmental legislation is often simply ignored. Economic incentives for environmental protection remain limited, monitoring and measuring standards are weak, and oversight is often nonexistent. Despite a plethora of legislation and public cries to the contrary, national parks are still prey to development and pollution. And perhaps most important—as discussed below—a crackdown on environmental NGOs in some countries has made any gains in public participation and oversight today quite precarious.

Instead, a number of serious obstacles—including policy priorities, limited resources, lack of political will, strong vested interests, corruption, secrecy, and other considerations—have turned out to be more complex than anticipated. Despite the plethora of environmental laws and regulations, for example, relative to other societal challenges environmental issues are not a top priority either within governments or among large segments of NIS populations. Issues of environmental protection have consistently decreased in priority over the past decade in Russian policy as a whole. The trend is evident in declining budgetary resources allocated to environmental problems: In 1997, for example, spending on the environment in Russia was less than one-half of 1 percent of total federal budget spending—a decline from previous years—and it has continued to decline since. Although water contamination has increased since the mid-1980s in Russia, spending on drinking water quality has decreased 90 percent from 1980 levels.<sup>13</sup> And declining commitment to environmental issues is likewise demonstrated in institutional changes, including the emasculation of environmental institutions in Moscow. In 1996, for example, the Russian Ministry of Environmental Protection was demoted to the less prestigious and effective level of a state committee; May 2000 saw a further diminution of environmental issues when that committee, along with the Russian Forestry Service and other committees, was formally abolished. Their responsibilities were transferred to the Ministry of Natural Resources—in the eyes of many, a situation of the fox guarding the chicken coop.

The same declining commitment is seen in many areas. Few resources are directed to environmental issues throughout the NIS southern tier because of the



exigencies of economic decline, political tension, and—in places such as Tajikistan, Azerbaijan, and southern Russia—war. Environmental challenges are not even mentioned in Georgian President Shevardnadze's re-election platform announced in March 1999, although almost every other societal ill (poverty, unemployment, the timely payment of wages and pensions, education reform, corruption, economic reform, strengthening Georgian statehood, etc.) is mentioned explicitly.

In some areas those priorities are mirrored among the NIS populations. A number of public opinion surveys indicate their very high level of concern for environmental problems.<sup>14</sup> But when ranked against other social problems—such as high prices, unemployment, housing, crime, ethnic relations, and so forth—environmental issues tend to fall relatively low. In a survey that we conducted in the mid-1990s in Central Asia—one of the most environmentally devastated regions of the former USSR—less than 5 percent of our 2,037 respondents named environmental issues as the first priority, versus 23 percent who listed unemployment first.<sup>15</sup> Our findings do not demonstrate a lack of concern about environmental issues in the region as much as they reflect the severity of other economic and social problems. But the net effect is that in some areas, environmental issues often get pushed to the bottom of the priority list.

The lack of clear priority for environmental issues is compounded by what NIS governments claim to be the greatest obstacle to addressing these environmental horrors, a lack of resources. To be sure, as noted above, even the most rudimentary efforts at environmental clean-up would still cost billions of dollars. In a December 1999 speech at the Wilson Center, former Soviet president Mikhail Gorbachev emphasized that each factory to destroy chemical weapons in Russia would have a price tag of \$1 billion. As he put it, "Russia does not have the funds to cope."<sup>16</sup>

It is not clear whether NIS governments such as Russia and Kazakhstan in fact have the funds to cope if priorities were redirected to those ills. But critics worry that the high cost of environmental cleanup—combined with government priorities and economic incentives to expand development of Russia's resources, particularly oil and gas production—produces a powerful rationale for authorities to ignore environmental issues altogether. Indeed, economic and environmental tradeoffs in the NIS are also powerful disincentives to addressing environmental ills. Regarding nuclear power, for example, despite the dangers created and highlighted by Chernobyl, Ukraine's reliance on nuclear power continues to grow; today, nuclear energy provides as much as 42 percent of Ukraine's electric power, up from 30 percent only three years ago, and about half of Kyiv's energy comes from one of the two reactors still operating at Chernobyl. The same is true in other NIS countries. Armenia's Metsamor nuclear power plant, for example—closed in 1988 and 1989 because of public pressure—has been widely considered unsafe because of its precarious position on a seismic fault line. But the plant was reopened in 1995 with Russian assistance to compensate for severe energy shortages in Armenia. The Armenian government has pledged to close the plant in 2004; but management continues to assert that it can operate for another sixteen

years. Many believe a shutdown is unlikely when Metsamor supplies more than one-third of Armenia's electricity.

Similar tradeoffs occur in all industries. Heavy industries throughout the NIS no longer use pollution control equipment—if they ever did—because of the high costs associated with their use. Despite the environmental impacts of the mining industry, new mining operations—such as the large scale open-pit lead and zinc mine reportedly opened at Kustenay, Kazakstan, in 1999—continue to expand in many areas of the NIS. And the list goes on.

Even when governments have made a commitment to address environmental concerns, the lack of reliable data and the proliferation of competing and over-

lapping institutions and laws make implementation difficult.

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Regional and federal laws within Russia, for example, often directly conflict and work at cross purposes. Fragmented administrative control means that there are few effective mechanisms to mediate in the many situations of infighting among federal agencies. And lack of reliable data—as well

as strict government control over data—makes planning difficult. For example, aside from the thirty-one people who died within weeks of the Chernobyl accident, official estimates of the total number of deaths in Ukraine from the accident range from only fourteen additional people to more than 125,000.

### **Corruption and Crackdown**

Perhaps most important, overarching all of these obstacles are more sinister obstacles that have intensified over the past few years: corruption, growing secrecy, and efforts to increase political control over citizens in many of the NIS countries.

High levels of corruption and a strong informal economy characterize all of the newly independent states but may be particularly salient in the environmental sector. Natural resources throughout the NIS are big business, and individuals and organizations with control over them often have strong interests in maintaining the status quo. Weak and fragmented institutions and poorly implemented laws in the new states leave the door open to back-room and under-the-table deals, and there is a lack of transparency and oversight in the making of resource and environmental decisions. In addition, interviews and a survey of the Russian press suggest a widespread view that funds designated for environmental cleanup often simply line the pockets of local government officials. All of this adds up to actions that are viewed as often corrupt, arbitrary, and self-serving.

Indeed, some local observers believe that the greatest obstacle to effectively addressing environmental issues is the fact that environmental protection itself

has become big business. Where significant funds have been invested to address large-scale environmental problems such as those of the Aral Sea and Lake Baikal—and where there is little oversight over how funds are spent and little to show in results—locals have become cynical; many believe that powerful vested interests have too much to gain by prolonging these catastrophes. In the words of one Russian commentator, describing the lack of effective environmental clean-up at Lake Baikal:

With all the money that has been earmarked for the protection of the region, not only would it be possible to shut down the combine, but you could bury it in the ground and plant rose gardens in its place, dress all the workers in snow-white tunics and buy each one a book and a coffee grinder . . . with all the money that's been invested in it [Lake Baikal], they could have built a Disneyland, 18 casinos, three erotic massage parlors, and 16 teahouses. . . . But isn't this ridiculous? Apparently not.<sup>17</sup>

That author argues that the inability to address the problems is not “idiocy” or incompetence, “but rather like a very wise and carefully thought-out system to pump money out of a sentimental society that cares about the environment” This cynicism extends to views of American and other Western corporations interested in exploiting natural resources in the NIS. The corporations are widely viewed as impervious to environmental concerns and out for their own gain to the locals’ environmental and economic loss.

In Russia and other areas of the NIS, the past several years have also seen an increase in secrecy surrounding issues of environmental hazards and protection that seems meant to hide rather than address environmental ills. Alexei Yablokov refers to a “rising wave of secretiveness in Russian society” that began around 1994 and is increasingly troublesome for those concerned about the health of Russia’s environment and nascent civil society.<sup>18</sup> For instance, a secret classification was imposed in August 1994 on radioactive waste data for all repositories in the Volga region, and entire areas were reclassified as secret cities ( or, as officially labeled, “closed administrative territorial formations”). In November 1996, Severomorsk, where the Northern Fleet submarine base is located in Murmansk oblast, was declared closed. A presidential edict of 30 June 1997 redesignated Shikhany—located on the Volga above Saratov, with facilities for the development, production, and testing of chemical weapons—a secret city as well. In January 1998, Raduzhny, a center for laser weapons production in Vladimir oblast, was declared closed. And Russian observers expect this trend to continue. According to Russian sources, the next city slated to be reclassified as closed will be Kapustin Yar, a former nuclear weapons test site located near the Kazak border in Volgograd oblast.

According to Yablokov, two official reasons are given for the increased secrecy: to encourage the safe operation of the installations themselves and to ensure “the environmental security of the population.” But if the Soviet experience is a guide, increased secrecy tends not to reduce but to increase environmental risk.

As mentioned above, the focus on secrecy has been accompanied by increasingly severe and frequent crackdowns on individuals and NGOs over allegations that they have exposed “secret” environmental information or been involved in

inappropriate activities, including spying for foreign governments. The harassment and imprisonment of scientists and environmentalists in Russia—Alexander Nikitin, Vladimir Soyfer, Grigoriy Pasko, and others—for exposing environmental ills within Russia are well known. In 1996, Nikitin, a retired naval captain, was arrested for co-authoring a report with the Norwegian organization Bellona that exposed the serious dangers of nuclear contamination from Russia's Northern Fleet. The report described the problem of unstable nuclear reactors on aging submarines—what the report referred to as potential “floating Chernobyls”—threatening not only Russia but Europe as well. Other scientists have pointed to similar dangers—such as the dumping of nuclear wastes into the Sea of Japan as videotaped by Pasko—and have met similar fates.

But those examples are only the tip of the iceberg, as other regions and NIS countries have followed suit. Scientists in Siberia have lost their jobs for publicizing data about chromosomal damage and other health effects caused by radiation exposure in villages around Mayak. Perhaps most notable in other NIS countries is the imprisonment in Belarus—on 13 July 1999—of Yuri Bandazhevsky, rector of Gomel Medical Institute, whose research documents that radioactive particles still contaminate food in Belarus and are being consumed by the population. According to local observers, the government reportedly reacted strongly to the economic implications of this research—particularly that limitations should be placed on local food production, consumption, and exports to other parts of the former Soviet Union and abroad. After Bandazhevsky also alleged misappropriation and theft of funds by officials in a government commission on Chernobyl, the government charged him with bribery and imprisoned him over a year ago.<sup>19</sup> The chilling impact of those events on individuals and NGOs is caused not so much by questions of the validity of his findings or of government charges against him but, as in previous times, the fact that he was never afforded due process so that the facts could be determined.

### **Implications for U.S. Policy**

The past decade has seen a number of important U.S. initiatives to help address these concerns. From programs for monitoring air emissions in Russia, to transferring the management skills to monitor water quality in Ukraine, U.S. programs have improved capabilities to measure and monitor environmental pollution throughout the NIS. From expanding and upgrading processing facilities to dispose of low-level radioactive waste, to addressing the needs for more effective storage facilities, the United States has likewise been involved in combating Russia's massive nuclear waste challenges. Many Russians credit a visit of Vice President Gore to Samara, in the Volga region, as helping to catalyze the Russian government's public commitment to convert Soviet era defense plants to civilian uses and the founding of successful joint ventures, such as the Samara Metallurgical Plant, as part of the conversion process. From the creation of the Ecological Television Center (ECO-TV) in Ukraine to produce weekly programs on environmental issues, to U.S. support of NGOs in the farthest reaches of Central Asia's Ferghana Valley, U.S. programs also have greatly enhanced

public awareness and participation in addressing environmental issues from the bottom up.

But U.S. officials also readily admit that programs in the NIS have not been as effective as in, say, Poland, where they believe success has been enormous. Change has been slow to come from the NIS side, implementation and monitoring have often been weak on the part of both sides, and U.S. funding for the programs has been erratic. At this difficult juncture, and as a new administration takes office in the United States, it makes sense to reassess U.S. efforts to accommodate the more difficult context and changing role of environmental issues.

The first step in reassessment must be to ensure that programs are grounded in U.S. interests. Environmental assistance is important not only for humanitarian reasons but because environmental issues directly affect our own interests in the NIS and abroad: From radiation in Russia's rivers flowing into the Arctic Ocean, to "floating Chernobyls," to the dumping of nuclear materials in the Sea of Japan, environmental policy in the NIS affects the health and safety of other parts of the world, including those of our allies and ourselves. Environmental pollution is increasingly triggering instability throughout the NIS, which will likely intensify with time. And the crackdowns on environmental experts and NGOs in many of those countries have become visible symbols of human rights abuses and of the obstacles to democratic reform.

A new U.S. strategy should focus more directly and effectively on these areas; it should focus particularly on how specific programs are implemented and monitored and emphasize the importance of fostering and assisting true NGOs to encourage change, oversight, and accountability. A second recommendation, then, is that the primary goal of environmental programs not be viewed solely as environmental clean-up but as contributing—perhaps more than in any other area—to building civil society. Encouraging citizen involvement in addressing issues important to them not only encourages environmental clean-up itself but empowers new constituencies and informs populations that they can make a difference in their own future. At a time when U.S. programs are narrowly stove-piped, environmental programs should be viewed as among the most powerful democracy-building programs in our assistance arsenal, and environmental issues should be considered an essential part of programs designed to encourage civil society, promote healthy economic reform, and minimize conflict and instability.

U.S. strategies and tactics must also be shaped to take into account the economic, political, and social obstacles discussed above. Western donors and policymakers should utilize Western regional experts far more than they do today to integrate a more nuanced and practical understanding of the informal workings of environmental issues—who wins and who loses, both institutionally and personally—in designing, implementing, and most important, monitoring environmental programs. Donor programs in the field that do not incorporate this expertise have been criticized for and continue to run the risk of inadvertently exacerbating corruption and, ironically, putting an additional brake on potential democratic and economic reform.

Finally, greater linkages among programs that support governments, the busi-

ness community, and NGOs should also be pursued. It should be made clear that programs will suffer if independent environmental experts are muzzled, harassed, and imprisoned. By contrast, any openings for serious and effective dialogue among governments and nongovernmental groups should be pursued. In some areas, there is much on which to build: environmental NGOs in Krasnoyarsk and Irkutsk, for example, reportedly work well with, and are supported by, local government institutions; groups such as ISAR have provided some support to enhance those relationships, but funding is scarce and fickle.

A case in point is an extraordinary meeting that took place in Moscow on 25 January 2000 between members of the environmental NGO community and officials of Russia's internal security organ, the FSB. The catalyst for the meeting was a letter sent from several dozen environmental activists to the FSB expressing concern about FSB accusations that Russian environmental organizations were spying for foreign governments. Alexei Yablokov—formerly President Yeltsin's environmental advisor and in the National Security Council, now head of the Center for Russian Environmental Policy and initiator and co-author of the letter—requested an answer from the FSB to discuss the accusations.

In December 1999, Yablokov was asked to gather leaders of NGOs for a meeting. Seven individuals representing Russian NGOs met with seven officials of the FSB, including three department chairmen and three deputy chairmen. In the words of Alexei Yablokov, the discussion was “hot, but friendly,” and the door was left open for NGOs to expand contacts in the field of environmental security and safety, and even to organize a special all-Russian bilateral conference on the problem to bring together government officials and policymakers with representatives of many nongovernment organizations. Ironically, however, the NGO community has been unable to raise funds for the country-wide conference and follow-up activities to continue the dialogue initiated by the meeting—perhaps because neither the programs nor Yablokov fall neatly into “grassroots” and “governmental” categories.

### Conclusion

As the political and economic environment becomes more complex throughout the NIS, it is critical that the United States become more open to new approaches and new ideas to build on those we have pursued over the past decade. It is important that we make environmental issues a higher priority but that we also prioritize our own goals. It is important that we incorporate not only technical but Western regional experts to better inform our assistance efforts; Western regional experts are best placed to help shape programs and policies to fit the informal economic, political, and social realities of the new states and to help monitor and determine when programs should be redirected. It is important that we merge the lines among programs so that environmental programs and projects are directed as much at economic and democratic reform as they are at environmental cleanup. And it is important that we clarify how to monitor and measure our efforts more effectively while widening the net of programs that might encourage fundamental change.

Above all, we should keep in mind that environmental programs are tools for achieving diverse and important ends. They are tools not only to help improve the health and well-being of NIS populations but to encourage the development of civil society, promote healthy economic development, reduce the potential for conflict and instability throughout the NIS, and ultimately—perhaps more so than in any other region on earth—to improve the future health and stability of ourselves, our allies, and our entire planet.

#### NOTES

1. Alexei Yablokov communications with the author.
2. Ibid.
3. See Judith Miller, "Poison Island: A Special Report," *New York Times*, 2 June 1999, A1.
4. Much of the data for Russia used in this article, comes from the annual Russian government reports "O sostoyanii okruzhayushchei prirodnoy sredy Rossiyskoy Federatsii" for various years. The quotation and other data are not-for-attribution interviews throughout Central Asia.
5. See S. Morgachev and M. Sergeev, "Vrednost'—norma zhizni," *Kommersant*, 11 May 1999.
6. Stated by Larisa Ignatyeva, at the Federal Medical University, Irkutsk, as reported by Laurie Garrett in *Newsday*.
7. Cited in "The Environmental Outlook in Russia," National Intelligence Council, ICA 98-08, January 1999.
8. See, for example, Murray Feshbach, "A Different Definition of National Security: Environmental and Health Issues in Russia and Its Impact on the West," paper prepared for CERES Symposium "Russia in the 1990s and Beyond," 11 September 1998.
9. For these and other cost estimates mentioned in this article, see "The Environmental Outlook in Russia."
10. See description cited in Richard Paddock, "Crystalline Lake Baikal Has Cloudy Future," *Los Angeles Times*, 22 March 1998.
11. See "The Environmental Outlook in Russia."
12. Based on communications from Alexei Yablokov and others.
13. See "The Environmental Outlook in Russia."
14. Surveys by myself and JNA Associates, Inc. have been conducted under the auspices of the MacArthur Foundation, the U.S. Institute of Peace, and U.S. and foreign corporations.
15. For results of that survey, see Nancy Lubin, *Central Asians Take Stock: Reform, Corruption, and Identity* (Washington, D.C.: US Institute of Peace, 1995). For findings of our earlier surveys, see my "Pollution, Politics and Public Opinion," *Demokratizatsiya* 2, no. 1 (winter 1993/94).
16. "The Walls Yet to Fall," remarks by Mikhail Gorbachev at the Woodrow Wilson International Center for Scholars, 7 December 1999.
17. Mark Glukhovskiy, "No Saving Lake Baikal," *Moscow News*, 30 July 1998.
18. From a discussion of these secrecy issues in Alexei Yablokov, "A New Iron Curtain," *Moscow News*, 9 July 1998, and communication with the author.
19. Under international public pressure, the government eventually released Banzhevsky from imprisonment, but his movements remain severely restricted; he has lost his job, has no means of financial support, and those who have helped him have found themselves the target of increased government harassment.