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Siberia, Environmentalism, and Problems of Environmental Protection

By ARMIN ROSENCRANZ* AND ANTONY SCOTT**

I. INTRODUCTION

Siberia contains the world's largest undeveloped open space.¹ It comprises one-tenth of the world's land mass, but is populated by a mere thirty million people. Vast areas are completely pristine, including some of the world's largest forests, which contain one-fifth of the earth's forest cover,² and one-third of the earth's coniferous forests.³ These forests cover an area the size of the continental United States.⁴

Large herds of reindeer roam on Siberia's tundra. Lake Baikal, the world's largest lake, which holds twenty percent of the world's (and eighty percent of the Soviet Union's) fresh water, is also in Siberia. The lake is home to 1500 plant and animal species, 1200 of which exist nowhere else.⁵ The open space of Siberia thus represents a unique environmental resource for the USSR and the entire world.

The long term integrity and health of Siberia's environment is in jeopardy, however, because the natural riches that give Siberia its ecological importance invite exploitation. Timber operations have degraded the environment, and it seems likely that timber extraction and clearcutting will accelerate.⁶ Huge hydroelectric projects have been planned for, or

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1. We use the term "Siberia" to indicate the entire region of the USSR that lies East of the Ural Mountains, including the Soviet Far East.

2. Zimmerman & Briggs, *Bitter Winds Blow Through Siberia*, Christian Sci. Monitor, Jan. 11, 1989, at 18; see also B. BARR & K. BRADEN, *THE DISAPPEARING RUSSIAN FOREST* 39 (1988).

3. B. BARR & K. BRADEN, *supra* note 2, at 1.

4. Geniella, *L-P Looking at Soviet Timber*, The Press Democrat, June 15, 1990, at A1, col. 1.

5. Davidson, *Poll: Environment No. 1 Soviet Worry*, San Francisco Exam., Nov. 22, 1989, at A10, col. 1, A11, col. 1.

6. See generally B. BARR & K. BRADEN, *supra* note 2.

are already placed in, Siberia.⁷ The effluent from gigantic saw, pulp, and paper mills threatens the life of Lake Baikal.⁸

Siberia also contains two-thirds of the USSR's gas and oil reserves,⁹ as well as large quantities of coal, diamonds, and precious metals. These resources generate twenty billion dollars in revenues, or roughly half of all Soviet hard currency receipts.¹⁰ Thus, there are intense pressures to increase the exploitation of Siberian resources, despite the threat of ecological disaster.¹¹

It is as unrealistic to hope that the pressures to exploit Siberia's resources will abate as it is foolhardy to assume the Siberian environment can support unrestricted development. How much land is to be preserved, how much is to be developed, and the nature and scope of the developments, are crucial questions.

This Article will try to provide a context within which these questions can be addressed. It will first touch on some of the historical inadequacies of the Soviet legal and regulatory systems, and on the nature of opposition to environmentally damaging projects. The Article will then explore the current state of Siberian local economies, and the threat that economic joint ventures pose to these economies and the environment. This will be followed by a brief examination of the promise of economic and political decentralization. Finally, the Article will propose some guidelines for preserving Siberia's environment.

II. THE PAST: CENTRAL GOVERNMENT EXPLOITATION AND LOCAL RESISTANCE

A. The Centralized Production System

The system which governs production and resource extraction in the Soviet Union seems to have contributed greatly to environmental degradation. Industrial production in the USSR has taken place under the aegis of centralized production ministries. These ministries set nationwide production quotas that are allocated through the individual state-run enterprises. In an attempt to raise the standard of living in the

7. Peterson, *State of the Environment; Part III: The Water*, Radio Free Europe Daily Rep.: Munich, Feb. 19, 1990.

8. Stewart, *The Lake is in Great Peril*, NEW SCIENTIST, June 30, 1990, at 58-62.

9. Sagers, Moe, Green, & Castberg, *Prospects for Soviet Gas Exports: Opportunities and Constraints*, 29 SOVIET GEOGRAPHY 881, 882 (1988).

10. Interview with Paul Hoosin, Professor of Geography, University of California, Berkeley (Nov. 21, 1990) [hereinafter Interview with Paul Hoosin].

11. See generally Edwards, *Siberia in From the Cold*, NAT'L GEOGRAPHIC, Mar. 1990, at 2.

USSR, production quotas have historically been set at unrealistically high levels. Individual factory managers are pressured to meet these inflated targets.

Historically, each ministry had its own environmental production unit which has set the ministry environmental policy.¹² Local authorities are then responsible for setting more specific standards, but the responsibility for meeting both production quotas and specific environmental regulations lies with the individual enterprises run by the central production ministries. Local governing bodies have therefore been in the untenable position of setting standards for, but having no real authority over, polluting enterprises which take their orders from the production ministries.¹³ Thus, the disincentives for pollution have been and continue to remain small. Environmental protection seems to fall by the wayside as factory managers scramble to meet their production quotas.

The advent of *Perestroika*, the Soviet Union's recent policy of economic restructuring, brought with it an attempt to change the environmental regulatory system. A new agency, *Goskompriroda*,¹⁴ was formed in 1988 to oversee all environmental regulation and enforcement.¹⁵ Unfortunately, *Goskompriroda* has not been very successful since it suffers from a lack of status, legal authority, jurisdiction, and funding.¹⁶

The chairman of *Goskompriroda* is but one of fifty members in the Council of Ministries. Frequently in the minority, *Goskompriroda* has no recourse if a decision of the Council of Ministers goes against it. It can, and sometimes does, conduct environmental impact assessments. However, if a polluter refuses to accept *Goskompriroda*'s negative impact assessment and brings the matter to the Council, the Council generally overrules the new agency.¹⁷ While *Goskompriroda* can levy fines against polluting enterprises, the fines are too small—only 100 rubles—to deter pollution.¹⁸

Goskompriroda has been further hampered by the individual pro-

12. Robinson, *Soviet Environmental Law and Perestroika*, ENVTL. POL. & L. 224, 225 (1988).

13. K. Franchuk, *The Roots of Environmental Disruption in the Soviet Union* 11 (1990) (unpublished manuscript).

14. Translated literally, *Goskompriroda* means the Committee on Environmental Protection.

15. Robinson, *supra* note 12, at 225.

16. W. Freeman, *The Politics of Environmental Protection in the USSR: The Case of the Soviet EPA* 3 (Sept. 22, 1989) (unpublished research memorandum for the U.S. Information Agency) [hereinafter W. Freeman, *Politics of Environmental Protection*].

17. *Id.* at 3-4.

18. Edwards, *supra* note 11, at 20.

duction ministries, which have tenaciously held onto their environmental authority, including their authority over air and water pollution, and forest protection, although such functions were supposed to have been absorbed into *Goskompriroda*.¹⁹ By stalling for time, and shifting bureaucrats and money to nonenvironmental units, the production ministries have refused to reveal the extent of their resources.²⁰ The indifference of these entrenched bureaucracies to the environment has been hard to overcome.

Goskompriroda's legal authority is still not defined by any basic document.²¹ While it has used environmental impact statements to close down some of the worst polluters and to prevent the building of certain new facilities, *Goskompriroda* has done so without any firm legal basis.²² One such closure astonished former Prime Minister Nikolai Ryzhkov, since the matter had not first been addressed by the central government.²³

Finally, *Goskompriroda* is inadequately funded.²⁴ Production competes with pollution control for scarce resources, and in current economic conditions, *Goskompriroda* gets squeezed.²⁵ The agency does not have sufficient staff or equipment to adequately monitor polluters, nor does it possess hard, convertible currency. Thus, though it is responsible for bringing "clean," state-of-the-art technologies and monitoring equipment to the Soviet Union,²⁶ *Goskompriroda* has no funds to import such foreign products.²⁷

The ineffectiveness of *Goskompriroda* and of the Soviet regulatory system in general, coupled with the priority production takes over environmental protection, have led to a reckless exploitation of Siberian resources. The absence of cultural ties connecting most Soviet policymakers to the vast Siberian lands²⁸ may also have contributed to a vision of Siberia as merely an open waste land to be exploited.

19. Robinson, *supra* note 12, at 225.

20. *Id.* at 226.

21. W. Freeman, *Politics of Environmental Protection*, *supra* note 16, at 4.

22. *Id.*

23. W. Freeman, *Environmental Issues in the USSR* Supreme Soviet (Jan. 25, 1990) (unpublished research memorandum for the U.S. Information Agency).

24. W. Freeman, *Politics of Environmental Protection*, *supra* note 16, at 3-4.

25. *Id.* at 4.

26. Robinson, *supra* note 12, at 225.

27. E. Green, *Ecology and Perestroika: Environmental Protection in the Soviet Union* 59 (1990) (report prepared for the American Committee on U.S.-Soviet Relations).

28. Interview with Paul Hoosin, *supra* note 10.

B. Local Environmental Activism

Despite the central government's production priorities, Siberian Russians and regional natives have occasionally successfully halted development projects. Arising from a deeply felt connection to the land,²⁹ their concern for the environment has sometimes managed to neutralize the interests of the production ministries.

Recently, for example, native Siberians have been instrumental in halting a major expansion of natural gas development on the Yamal Peninsula.³⁰ Yamal's natural gas reserves are huge,³¹ and production ministries have looked to them for both export and domestic supply.³² However, the peninsula is ecologically fragile, and some scientists believe that intensive development could cause it to simply melt away.³³ Existing projects have already caused major devastation. Thirteen million acres of grazing land have been lost,³⁴ and the reindeer population has shrunk by at least half. This has been devastating to the Siberian natives, the Yamal Nentsy, who have depended on the free-roaming reindeer for sustenance for countless centuries.

When the Nentsy learned of the planned natural gas development, they mounted a protest. Numbering only 5000, the Yamal Nentsy nevertheless convinced local officials to take their case to Moscow,³⁵ where they found support among the growing corps of Soviet environmentalists. Although that 1.2 billion dollars had already been invested, the central ministries' plans for drilling and building were successfully resisted, and the project has been stopped, albeit temporarily.³⁶ As a result of the protest, Moscow has ordered a review of the Yamal development plans, including their impact upon the Nentsy.

Environmentalists were similarly able to halt a centrally planned project to divert the waters of Siberia's northward-flowing rivers to irrigate the arable land in the country's southern regions. Construction on the Northern Rivers project was initiated in 1980, despite technical, economic, and scientific feasibility studies which indicated that the project was extremely suspect.³⁷ The infrastructure for the plan, including pro-

29. *Id.*

30. Edwards, *supra* note 11, at 10.

31. Sagers, Moe, Green, & Castberg, *supra* note 9, at 884.

32. *Id.* at 884-85.

33. Edwards, *supra* note 11, at 10.

34. *Id.* at 39.

35. *Id.* at 10.

36. *Id.*

37. Interview with Taras Kalinichenko, Research Fellow for the Institute of State and Law, USSR Academy of Sciences (Aug. 14, 1990).

ject-based towns and electric generating stations, was hastily assembled. Because no money had been officially appropriated for the project, this preliminary construction violated Soviet law. To remedy the situation, the Communist Party Congress passed a resolution retroactively legitimizing the construction.

Shortly thereafter environmental groups began to protest. They pointed out the disastrous consequences which would flow from the project. More than six million hectares would be inundated, water supplies for the cities of Wloyda and Shola would be flooded, many cultural sites would be submerged, and climate changes could occur. Though the environmental opposition continued to grow in subsequent years, the power of the Central Ministries, especially the Ministries of Water Resources and Agriculture, overwhelmed all opposition. Further development plans were railroaded through the Central Committee of the Communist Party (CCCP) and the Council of Ministers.

After President Mikhail Gorbachev's rise to power in 1985, the USSR Academy of Sciences created a special commission to investigate large-scale land reclamation projects. This commission studied the Northern Rivers project and concluded that the socioeconomic and ecological problems which it would cause made the project absolutely unfeasible. While the CCCP accepted this recommendation, the work of the Central Ministries continued unabated. Finally, in 1988 a legal analysis was conducted which ascertained which laws had been violated by the planning and construction of the project. In the wake of this report, the CCCP and the Council of Ministers ultimately halted work on the project.

Stopping this gigantic water transfer project represents a remarkable success on several fronts. Besides preventing an environmental catastrophe, it demonstrated the pressure that local environmentalists could mount and sustain. However, it also illustrated the influence of those in authority and the necessity of eliciting official alliances. The independent project evaluation, and subsequent legal evaluation, by the members of the Academy of Sciences were critical to the project's suspension. Moreover, it was not until Gorbachev came to power that the project was stopped. Gorbachev has been quite responsive to environmental causes. Under President Leonid Brezhnev's tenure, the Central Ministries had been able to keep the project alive despite popular protest and the clear illegality of their actions.

In short, environmental activism is a necessary, but by no means sufficient, engine of change. Given enough clamor, coupled with the

right sympathies at high levels, environmentally destructive projects may be stopped.

C. Central Government Power

The Yamal Peninsula gas exploration and the Northern Rivers diversion project are strikingly similar in important respects. Both projects were halted despite the fact that large amounts of money had already been spent by the government. The opposition to both projects was sparked by local environmentalists, and was only successful when influential members of the central government took up the cause.

While no action would have occurred without the initiative of local environmentalists, these cases highlight the overarching importance of central government priorities. Under Brezhnev, both the gas exploration in the Yamal and the Northern Rivers project proceeded despite known risks. Both projects were stopped when Gorbachev came to power. It appears that the differing agendas of these leaders, and the people close to them, ultimately determined the success of the opposition movements.³⁸

In the future, the political influence of environmentalists is likely to increase with the decentralization of political authority and its disbursement to the republics, because it will be easier to mount political pressure against local leaders than against far-off figures in Moscow. The structural changes now occurring in the Soviet Union may thus decrease the vulnerability of environmental causes to the whims of the central government leadership.

III. THE PRESENT: JOINT VENTURES AND THE THREAT OF UNREGULATED DEVELOPMENT

A. The Push for Siberia's Economic Development

Soviet planners have long desired to develop Siberia.³⁹ The impetus to develop a Siberian infrastructure has come in part from the Soviet Union's substantially increased military presence in the Soviet Far East since the mid-1960s.⁴⁰ The military buildup was sparked by both the

38. Despite T. Kalinichenko's claims, the force of law does not seem to be the deciding causal factor in stopping the rivers project. Rather, the decision to adhere to the law, and the attendant environmental and political agenda that goes with this, were the deciding factors.

39. See B. BARR & K. BRADEN, *supra* note 2, at 64-68.

40. Bradshaw, *Soviet Asian-Pacific Trade and the Regional Development of the Soviet Far East*, 29 SOVIET GEOGRAPHY 367, 368 (1988).

Sino-Soviet split,⁴¹ and more recently has been fueled by the Soviet perception of the region's importance for projecting power into the Pacific Rim.⁴²

Soviet planners have had an ideological interest in the settlement, and resulting development of Siberia,⁴³ because it represents the fulfillment of the dual Leninist ideals of spreading industrialism and subjugating nature.⁴⁴

Finally, Soviet central planners have desired to make use of Siberia's vast natural wealth. Development of Siberian natural resources has presented an opportunity to build both the local and the Soviet economies.⁴⁵ Thus, Stalin reportedly was "obsessed" with the completion of the Baikal-Amur Mainline (BAM) railway to open the region to economic development and resource exploitation.⁴⁶ All of the Soviet Union's natural diamonds and over half of its gold⁴⁷ come from Siberia, and the BAM has now made 1.4 billion cubic meters of high quality timber newly accessible.⁴⁸

Siberian resources are also given preferential tax treatment. The tax per cubic meter of wood from remote Siberian forests is one tenth that placed on the Russian Republic's most accessible timber, for example.⁴⁹

B. Failure in Siberian Development

The exploitation of Siberian resources has not benefitted local economies, however. While state plans in the 1970s and early 1980s called for the continued development of natural resources, the concentration on resource extraction truncated the Siberian economy,⁵⁰ which is now based on the export of raw, unprocessed materials, and the import of capital and manufactured products.⁵¹ Sixty percent of forest product shipments

41. *Id.* at 370.

42. L. DIENES, *SOVIET ASIA: ECONOMIC DEVELOPMENT AND NATIONAL POLICY CHOICES* 95-99 (1987).

43. K. Franchuk, *supra* note 13, at 2.

44. C. ZIEGLER, *ENVIRONMENTAL POLICY IN THE USSR* 8 (1987).

45. Address by M.S. Gorbachev at the Meeting for the Presentation of the Order of Lenin to Vladivostok (Aug. 27, 1986) [hereinafter Gorbachev Address], reprinted in *Gorbachev Accents Soviet Role in Asia*, CURRENT DIGEST OF THE SOVIET PRESS, Aug. 27, 1986, at 1, 4.

46. Dobbs, *Stalin's Dream, Russia's Nightmare: The Controversial Debut of the New Trans-Siberia Railroad*, Wash. Post, Oct. 30, 1989, at 10, col. 3 (nat'l weekly ed.).

47. Bradshaw, *supra* note 40, at 370.

48. Barr, *The Forest Sector of the Soviet Far East: A Review and Summary*, 30 *SOVIET GEOGRAPHY* 283, 292 (1989).

49. B. BARR & K. BRADEN, *supra* note 2, at 72.

50. See Bradshaw, *supra* note 40, at 372.

51. *Id.* at 368.

from the Soviet Far East to Soviet domestic markets consists of unmilled timber.⁵² Forest Industry Minister Busygin has indicated that only one-fourth of the forest sector exports consist of chemically and mechanically processed products.⁵³

With such a small local manufacturing base, the Soviet Far East must import ninety-five percent of all its iron products.⁵⁴ Moreover, the local manufacturing sector has been poorly coordinated with the extractive sectors of the economy. For example, combine harvesters, which Siberians have little use for, are produced in the region and exported, while mining equipment is imported.⁵⁵

The local economy's focus on raw material export is due to several factors. First, the authorities have not committed the needed capital to develop a significant manufacturing base.⁵⁶ Other public investments in the region, such as the construction of the BAM, have created more immediate needs. By generating an influx of workers, BAM has greatly exacerbated the local housing shortage. Housing space in Siberia is less than one-third of the Soviet norm.⁵⁷

Secondly, many laborers have been unwilling to permanently relocate to Siberia, and to embrace its harsh living conditions. This has prevented the establishment of a large and stable work force to drive a Siberian building program.⁵⁸ Workers who do come to Siberia typically do not stay,⁵⁹ and thus there is a sixty percent turnover in the construction labor force in the Soviet Far East each year.⁶⁰

The structure of the Siberian economy is unlikely to change any time soon.⁶¹ There is a perception among central government leaders that it is highly desirable to develop the manufacturing sectors of the Siberian economy.⁶² But such development would be very expensive.

52. Barr, *supra* note 48, at 295.

53. B. Barr, *The Soviet Forest Sector, Now and in the Future: Too Much Glasnost, Too Little Perestroika?* 17 (Jan. 19, 1989) (H.R. MacMillan Lectureship in Forestry) [hereinafter B. Barr, *Too Much Glasnost?*].

54. L. DIENES, *supra* note 42, at 89.

55. See Bradshaw, *supra* note 40.

56. See Dienes, *A Comment on the New Development Program for the Far East Economic Region*, 29 SOVIET GEOGRAPHY 420, 421 (1988) [hereinafter Dienes, *New Development Program*].

57. *Id.*

58. B. BARR & K. BRADEN, *supra* note 2, at 71.

59. Edwards, *supra* note 11, at 13.

60. Singur, *The Far East: Comprehensive Development of Productive Forces*, *PLANOVOYE KHOZYAYSTVO* (No. 3) 94-98 (1988).

61. See Dienes, *New Development Program*, *supra* note 56.

62. Gorbachev Address, *supra* note 45.

Development of Siberian forest processing facilities could cost 2 to 2.5 times more than in the European regions of the country.⁶³ Since the goals of *perestroika* favor a restructuring of the manufacturing heartland of the USSR rather than the remote resource-rich frontiers,⁶⁴ the economic and political constraints do not portend large domestic investment in Siberian materials processing industries, or in housing.

In fact, the central government is likely to actively discourage the development of Siberian infrastructure, and Siberian natural resources are likely to continue to serve the political, economic, and social "center" of the Russian Soviet Federated Socialist Republic (RSFSR). Possibly, large-scale harvesting and unprocessed export of Siberian forests could be used to cover the mistakes of forestry policies that led to the denuding of the USSR's western regions, since a policy of massive and accelerated export of Siberian logs could provide time for the Soviet economy to organize a sustained yield forestry system in the European-Uralian zone over the next thirty to fifty years.⁶⁵ In fact, current Siberian forest use focuses on satisfying export demand for unmilled timber in the rest of the USSR.⁶⁶

The paucity of funds for development, combined with the economic and political needs of the European regions of the USSR, indicate that domestic investment in the Siberian infrastructure will remain small. However, recent plans for the development of Siberia include the use of economic joint ventures to help capitalize infrastructure.⁶⁷ Indeed, the central government has recently actively encouraged joint ventures in Siberia by dropping restrictions on the share of operations that can be foreign-owned.⁶⁸

Joint ventures with the Pacific Rim nations make particular sense.⁶⁹ Because of lower transportation costs, export of Siberian resources to such countries is actually more economic than use in the western regions of the USSR.⁷⁰ Intra-USSR Siberian exports must travel 3000 kilometers by rail, whereas exports to the Pacific Rim can be transported by much less expensive merchant ships. This is especially true in the case of exports to Japan. Moreover, foreign firms have the capital and the knowl-

63. B. BARR & K. BRADEN, *supra* note 2, at 73.

64. Bradshaw, *supra* note 40, at 373.

65. B. BARR & K. BRADEN, *supra* note 2, at 73.

66. Barr, *supra* note 48, at 288.

67. See B. BARR & K. BRADEN, *supra* note 2, at 203-07.

68. B. Barr, Too Much Glasnost?, *supra* note 53, at 17.

69. Zimmerman & Briggs, *supra* note 2, at 18.

70. *Id.*

edge to efficiently exploit Siberian natural resources.⁷¹ This can benefit both the "center," which receives the economic advantage of joint venture exports,⁷² and the Siberian local economy, which can obtain much needed materials processing equipment.⁷³ The expansion of joint ventures is likely to affect the Siberian economy and environment.

C. Economic Impact of Joint Ventures on Local Economies

The development of Siberian local economies would obviously increase if raw materials were processed before export.⁷⁴ However joint ventures promote the export of raw materials. Timber, for instance, is the largest commodity for Soviet export to Japan, comprising nearly twenty-five percent of this region's exports in 1985.⁷⁵ But, eighty-five percent of this wood is unmilled.⁷⁶ For complex reasons, it seems unlikely that foreign companies will seek to develop extensive processing facilities in Siberia.

In the first place, by engaging in resource extracting, as opposed to processing, industries can minimize the difficulties of doing business in the Soviet Union. Because resource extracting industries do not require extensive plant and product management, they do not rely heavily on modern business tools, such as reliable telephone links, fax and copy machines, and personal computers, which are either difficult or impossible to secure in the Soviet Union.⁷⁷ Noting the organizational difficulties likely to be encountered in the USSR, the president of a U.S. consulting firm has advised that "joint ventures should consider the capital intensive branches of the economy, [which do not] requir[e] a quality of works and a western style of management."⁷⁸

A second reason that foreign companies will not enter into resource processing industries in Siberia is that it is in their economic interest to continue to rely on resource extraction. Resource processing in Siberia requires large-scale importation of equipment, training, and management.⁷⁹ It is generally easier and cheaper for companies instead to bring the raw materials to extant processing facilities. Regarding setting up operations in the Soviet Union, one wood processing entrepreneur said, "It

71. See B. BARR & K. BRADEN, *supra* note 2, at 203-07.

72. Interview with Paul Hoosin, *supra* note 10.

73. B. BARR & K. BRADEN, *supra* note 2, at 207.

74. B. Barr, Too Much Glasnost?, *supra* note 53, at 17.

75. Bradshaw, *supra* note 40, at 383.

76. *Id.*

77. See E. Green, *supra* note 27, at 59-60.

78. Y. Vanous, *Economicheskaya Gazeta* (No. 34/23) (1988).

79. See B. BARR & K. BRADEN, *supra* note 2, at 73.

will take a long time and you have to spend a lot of money up front, before you see some type of return."⁸⁰ Thus, many timber companies are focusing on the exportation of raw logs. As Louisiana Pacific spokesman Shep Tucher has stated, "We [are] not interested in developing infrastructure for them."⁸¹

Finally, the Soviet Union's lax environmental regulatory system, and the possibility of conducting operations relatively unhindered, may be another attraction to foreign resource extracting industries.

Unfortunately for local Siberian economies, the central Soviet government does not require that foreign firms engaged in joint ventures invest in manufacturing and materials-processing facilities. Thus, in the near term, joint ventures provide the best opportunity for large-scale exploitation of Siberian natural resources. The dependence of the USSR's European regions on Siberian-generated wealth is confirmed by the fact that Siberia accounts for eighty percent of the USSR's exports to Japan, whereas only twenty-five percent of Soviet imports from Japan are allocated to Siberia.⁸² The recent lowering of foreign ownership restrictions and the willingness of the central government to step up the export of unmilled logs to stem hard currency shortages⁸³ does not auger well for foreign investment in Siberian processing facilities.

D. Environmental Impacts of Joint Ventures

Joint venture operations in Siberia thus threaten the region's environment, as resource extracting industries often pollute heavily and are environmentally destructive. This is evident in clearcutting operations, strip and leachate mining, and gas and oil drilling in environmentally sensitive areas. Because joint ventures in Siberia often focus on resource extraction, adverse environmental effects are almost inevitable.

The intrinsic problem is compounded, however, by Siberian ecosystems and climatic conditions. Siberian tundra is especially sensitive to the movement of heavy vehicles and equipment, which are integral to gas and oil operations.⁸⁴ The Siberian climate is cold and makes growing conditions for timber especially harsh.⁸⁵ Indeed, the average diameter of mature trees in Siberia is only twenty-four centimeters.⁸⁶ Thus, regrowth

80. Robertson, *Soviet Future for Bohemia?*, Eugene Register-Guard, June 7, 1990, at 13.

81. Geniella, *supra* note 4, at A1, col. 5.

82. Bradshaw, *supra* note 40, at 386-87.

83. Geniella, *supra* note 4, at A1, col. 5.

84. See Edwards, *supra* note 11, at 16.

85. See B. BARR & K. BRADEN, *supra* note 2, at 84-91.

86. *Id.* at 72.

after timber harvesting is very slow, and the erosion caused by clearcutting is compounded.

Environmental destruction from joint venture operations will probably be compounded by the prevailing lax environmental standards in the Soviet Union. In the forestry industry, for example, cutting practices in all regions of the USSR are unsatisfactory from an environmental viewpoint.⁸⁷ Ninety percent of all logging is done by clear or concentrated cutting methods.⁸⁸ These methods harm the environment by irrevocably altering ecosystems, increasing erosion and stream siltation,⁸⁹ and inhibiting forest regrowth.⁹⁰ Moreover, the natural regeneration that does occur is often destroyed during fire salvage or thinning operations.⁹¹ Messieurs Braden and Barr have concluded that "[Siberian] timber utilization is essentially viewed as a mining operation with little long-term consideration for the environment."⁹²

Moreover, much of Siberian timber lies on mountainous slopes. While the felling of timber growing on steep slopes has historically been limited to twelve percent of the Soviet Union's annual cut,⁹³ there are current plans to increase this production to fifty percent.⁹⁴ This is disastrous for the environment. The soil erosion resulting from clear and comprehensive cutting is exacerbated by denuding steep slopes.⁹⁵

Foreign companies seem unlikely to maintain environmental standards higher than the Soviet norm. American timber companies engage in clearcutting despite large public protests in the United States, and there is little reason to think that, without opposition of any kind, they will nevertheless refrain from taking advantage of the lower Soviet standards.

Further, the Soviet Union's loose regulatory enforcement system enables environmentally destructive enterprises to ignore even the lax Soviet standards. As one Soviet economist has observed, "[i]n the West . . . such companies clean up after themselves only if forced to; however, the

87. *Id.* at 86.

88. B. Barr, *Too Much Glasnost?*, *supra* note 53, at 9.

89. Council of the Ministers of the USSR, *Baikal Declaration* (1990) (G. Davis transl.) [hereinafter *Baikal Declaration*].

90. B. Barr, *Too Much Glasnost?*, *supra* note 53, at 9.

91. Dembitz, *Man Who Walks in the Woods Returns from the Siberian Forest*, *So. Humbolt Life & Times*, Jan. 2, 1990, at 7, col. 2.

92. B. BARR & K. BRADEN, *supra* note 2, at 87.

93. B. Barr, *Too Much Glasnost?*, *supra* note 53, at 9.

94. *Id.*

95. See *Baikal Declaration*, *supra* note 89.

USSR lacks strong laws to prevent them from doing as they please."⁹⁶ Western companies may even use the USSR to dump polluting technologies. A former chairman of *Goskompriroda* noted that "[c]ertain companies . . . strive to get rid of equipment and technology no longer in demand in the West."⁹⁷

Moreover, joint venture projects are likely to be less subject to regulatory enforcement than Soviet enterprises. Because of the economic benefit it receives from joint ventures, the Soviet government has a further interest in easing regulatory burdens for such firms. The North Korean logging operations at Brusnichii exemplify central government reluctance to enforce joint venture conformity to existing law. The Korean operations in that region have encroached on a legally protected nature preserve, and the preserve director has led a public campaign to stop the logging; however, government officials overseeing the timber industry have not responded to the appeals. The agreement between the Soviet Union and North Korea has thus been given precedence over both local opposition and state law.⁹⁸

Even if these obstacles to environmental regulation could be overcome, the actual regulating or fining of violators is no easy matter. Since the ruble is not a convertible currency, most trade and joint venture agreements are made on a noncash basis. For example, the Tyndales Production Association in Tynda, Amur Oblast, is a joint venture with a North Korean timber company, whereby North Korea receives thirty-nine percent of the cut timber, and the USSR sixty-one percent. When popular protest revealed that the Koreans had overcut the tracts which were assigned to them, the result was more cutting in the same tracts; the Koreans could only pay their fines in timber, as there were no currency fines provided for in the joint venture agreement.⁹⁹

Although Soviet environmentalists generally prefer to shut down violating projects,¹⁰⁰ this method of regulatory enforcement seems ill-suited to joint ventures. Halting the operations of a foreign company may present thorny international problems, as well as questions concerning the disposition of previously made investments and project property.

96. W. Freeman, *Environmental Opposition to Foreign Investment in the USSR* (Nov. 22, 1989) (unpublished research memorandum for the U.S. Information Agency) [hereinafter W. Freeman, *Environmental Opposition*].

97. *Id.* at n.17 (quoting *PLANOVVOYE KHOZYAYSTRO* (No. 2) (1989)).

98. *See id.* at 6-7.

99. *Id.* at 5.

100. Interview with W. Freeman, Analyst, U.S. Environmental Protection Agency, Washington, D.C. (Aug. 1, 1990).

E. Obstacles to Citizen Oversight of Joint Ventures

The centralized production ministries generally broker joint venture projects, often behind a veil of bureaucratic secrecy.¹⁰¹ There is no citizen review process by which to assess the social and environmental consequences of any project,¹⁰² nor is *Goskompriroda* consulted. Even the Supreme Soviet, normally charged with regulating international aspects of government sponsored activities, is bypassed in the process of approving joint ventures.¹⁰³ Multinationals and the Soviet ministries are therefore unaccountable to local populations, and projects can be initiated without any opportunity for citizens to protest because there may be no advance knowledge of the project or its impact.¹⁰⁴ Moreover, citizens have little capacity to monitor public operations or compel enforcement of regulations once the projects are underway.¹⁰⁵

Joint ventures would be regulated more effectively if citizen groups had some input in how they were shaped. The agreements could then be crafted to facilitate enforcement, and make regulatory fines practicable and effective. One approach would be to include provisions in the agreement that guarantee the ability of citizens to monitor operations. This could involve providing monitoring equipment, as well as the required disclosure of technical information regarding operations.

Another approach would be to require foreign enterprises to put up a hard currency bond as insurance against environmentally damaging operations.¹⁰⁶ Additionally, any fines levied could go towards the purchase of foreign pollution abatement and monitoring equipment; such equipment is now largely unavailable because hard currency is allocated for higher priority items.¹⁰⁷ Foreign corporations might fear abuse of the insurance bond through trumped up violations, but it is more likely that the government's interest in promoting joint ventures would curb such practices.

101. Katasonov, *Capitalizing on Perestroika*, EARTH ISLAND J., Spring 1990, at 41.

102. W. Freeman, *Environmental Opposition*, *supra* note 96, at 12-13.

103. Katasonov, *supra* note 101, at 41.

104. W. Freeman, *Environmental Opposition*, *supra* note 96, at 12.

105. *Id.*

106. Baikal Declaration, *supra* note 89.

107. E. Green, *supra* note 27, at 59.

IV. THE FUTURE: LAND USE DECISIONS IN A TIME OF CHANGE

A. Decentralization and Environmentalism

The Soviet Union is now in the sway of a massive movement toward political and economic decentralization. Combined with a burgeoning of grassroots environmental activism, we now see a convergence of political, economic, and social forces that would seem to augur well for environmental protection. This convergence, however, holds a threat as well as a promise for the environment.

The opportunities for environmental protection are fairly clear. As we have noted, past environmental successes have required the aid of senior officials. Generally, opposition must become quite substantial before the attention of such officials is gained. Decentralization of political authority could mitigate these difficulties, since local officials tend to be more responsive and easier to influence than distant authorities.

Decentralized decision-making holds promise for more appropriately scaled, and hence less environmentally disruptive, projects. Forest Ministry Chairman Isayev has proposed that the role of local forest management be strengthened.¹⁰⁸ Because local authorities are more familiar with and more responsive to the particular needs of a region, they should be less tempted by huge development schemes. Local authorities are more likely to have a deeply felt connection to the land and an interest in its preservation.¹⁰⁹ Indeed, the pressure to stop the Northern Rivers project came in part from local authorities opposed to the project's disastrous economic and environmental consequences. As we saw in the Korean joint venture at Brusnichii, local authorities pressured the central ministries to prevent timber cutting in the nature preserves.

B. Decentralization and Economics

Local political responsibility for the protection of resources seems to offer the best promise for wise wilderness preservation and resource management, but the picture appears more ambiguous when local authorities also have economic control of resources. Generally, when local populations are poised to reap the economic benefits of development, they seem unable to maintain a long-term, environmentally sustainable vision of their resources. For example, numerous local nonforestry ministries ac-

108. B. Barr, *Too Much Glasnost?*, *supra* note 53, at 8.

109. T. Rainey, *Siberian Writers and the Struggle to Save Lake Baikal* 7 (unpublished manuscript).

cept wood cut by "nomadic" Siberian loggers.¹¹⁰ The forestry practices of these local "independents," however, seem to be destroying the viability of several large wood-processing complexes in Siberia.¹¹¹

Local authorities may be tempted to sell resources in the name of local economic interests. This temptation may compete with attempts to set aside and preserve tracks of land as pristine wilderness, since there is little incentive for local authorities, faced with local pressure for increased material needs, to resist the development of these resources.

One timely solution would be to set aside as much Siberian open space for preservation as possible. Soviet experts argue that the amount of land devoted to nature preserved should be increased by five or six times in the next ten years,¹¹² and this goal could be pursued during the decentralization process. Currently, there is no great need for unbridled development. The material needs of Siberia, with its small population, are much smaller than those of the rest of the USSR, and local authorities now seem to favor increased protection of Siberian forests and other natural resources.¹¹³

In short, there is now a window of opportunity to preserve Siberia's vast undeveloped land. Currently only about five percent of this land is protected from exploitation either through preservation in a pristine state (*Zapovednik*), or designation as wildlife preserves (*Zaposniki*). Expansion of these areas could preserve vast tracts of wilderness that have worldwide significance.

C. Land Preservation and Development in the United States

It seems unrealistic to hope that there will be no more exploitation of Siberian lands and resources. Given the inevitability of development, a new system of management to determine the wisest, most sensible, and most environmentally benign methods of developing these lands and resources will have to be devised.

In the United States, federal environmental regulations tend to be more stringent than state or local legislation. This also tends to hold true in the Soviet Union, where regional and Republic environmental laws are often too vague to be useful.¹¹⁴ In the interests of insuring the careful development of resources, thus minimizing pollution and protecting Sibe-

110. B. BARR & K. BRADEN, *supra* note 2, at 91.

111. *Id.*

112. Ryzhkov, *The Size of Nature Reserves and Costs of Their Maintenance*, 29 SOVIET GEOGRAPHY 918 (1988).

113. B. BARR & K. BRADEN, *supra* note 2, at 228-33.

114. Peterson, *supra* note 7.

ria's pristine wilderness, it is necessary to develop a system that enables the central government to fashion broad resource protection policies. This does not mean, however, that responsibility for environmental protection should be placed entirely with the central government. In fact, the collaboration of the Soviet Union, the Russian Republic, and Siberian local authorities will probably be necessary.

The variety of public land designations in the United States could be imported to the Soviet Union to help serve as a guide to Siberian land management. In the United States, as in the Soviet Union, some of the federally owned lands are set aside as wilderness areas, where no development of any kind is permitted.¹¹⁵ In national parks, all development is prohibited unless it is related to recreational use, which includes accommodations for park visitors.¹¹⁶ National wildlife refuges permit some development,¹¹⁷ although at the moment the largest of these refuges, the Alaska National Wildlife Refuge, is too remote for economically feasible development, though a large increase in world oil prices is all that is needed to make oil extraction economically feasible in this Alaskan refuge.

National forests under the control of the U.S. Forest Service contain most of the timber on public lands. Sustained yield timber harvesting is permitted in most of these lands.¹¹⁸ Finally, the Bureau of Land Management controls the remainder of the public lands, which are not designated national forests, wildlife refuges, parks, or wilderness—and a host of development activities are permitted there, including mining, timber harvesting, and oil and gas extraction.¹¹⁹

While most public lands are under federal protection in the United States, several states and counties have reserved substantial public lands as state parks, monuments, and wildlife preserves. These, too, could serve as models for the Russian Republic in preserving Siberian open space.

V. CONCLUSION

While the major question of who owns Siberian land and resources is being decided, central and local authorities should examine the experi-

115. 16 U.S.C. § 1 (Coggins & Wilkinson Supp. I 1990).

116. *See id.* § 1b.

117. *Id.* § 668dd(b)(1).

118. *Id.* § 528. Sustained yield is defined as "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land." *Id.* § 531(b).

119. *See* 43 U.S.C. § 1732(a) (Coggins & Wilkinson Supp. I 1990).

ence of other countries regarding the preservation and use of public lands and resources. Hopefully those who make the decisions affecting Siberian land and resources will resist development pressures, and will preserve the resources of these rare open spaces for the benefit of future generations.

The development which does occur should aim to diversify local Siberian economies, and decrease the mining and exploitation of Siberian resources. Such planning could have collateral economic benefits for the USSR's Western Regions as well. Recent economic analyses suggest that, because of transportation costs, the USSR's Western Regions' reliance on Siberian timber is more costly than careful and selective harvesting of the more proximate Ural timber supplies.¹²⁰ Above all, intensive local processing and manufacture, and effective use of resources, should be stressed. Joint ventures should be structured with an eye towards fulfilling these goals. This would benefit both the local economies and the environment.

120. B. BARR & K. BRADEN, *supra* note 2, at 2-3.

